

Sony Notebook User Guide

PCG-C1MGP

The WAVIO logo is rendered in a blue, stylized font. The 'W' is formed by a continuous wavy line. The 'A' is a solid blue circle. The 'I' is a vertical bar with a pointed top. The 'O' is a solid blue circle.

Read this first

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Safety information

Owner's record

The model number and serial number are located on the bottom of your Sony notebook. Record the serial number in the space provided here. Refer to the model and serial number when you call VAIO-Link.

Serial number: _____

Model number (product name in brackets): PCG-181M (PCG-C1MGP)

Warnings

General

- Opening the unit, for whatever reason, could lead to damages that are not covered by the guarantee.
- To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
- To prevent fire or shock hazard, do not expose your VAIO notebook to rain or moisture.
- Avoid using the modem during a severe electrical storm.
- Do not use the modem or a telephone to report a gas leak in the vicinity of the leak.

Audio/video

- Audio and picture distortion may occur if this equipment is positioned in close proximity to any equipment emitting electromagnetic radiation.

Connectivity

- Never install modem or telephone wiring during a severe lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Be cautious when installing or modifying telephone lines.

- ❑ Use your notebook only with the supplied AC adapter. To disconnect your notebook completely from mains voltage, unplug the AC adapter.
- ❑ Please make sure that the socket outlet is easily accessible.
- ❑ Never touch uninsulated telephone wire or terminals unless the telephone line has been disconnected at the network interface.

Hard disk drive

The magnetic properties of some objects can have serious consequences for your hard disk drive. They can erase the data on the hard drive and cause the computer to malfunction. Do not place your computer near or on any products which emit magnetic fields, mainly:

- ❑ TV sets,
- ❑ Speakers,
- ❑ Magnets,
- ❑ Magnetic bracelets.

Regulatory information

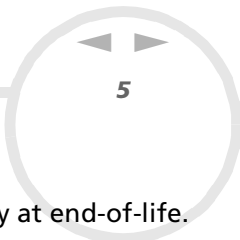
Sony hereby declares that this product is in compliance with the essential requirements and other relevant provisions of European Directive 1999/5/EC (radio equipment and telecommunications terminal equipment Directive)



This product complies with EN 55022 Class B and EN 55024 for use in following areas: residential, commercial and light-industrial.

This product has been tested and found compliant with the limits set out in the EMC Directive for using connection cables no longer than 3 metres (9.8 feet).

Please read the printed safety flyers before using your notebook.



Disposing of lithium ion batteries

Do not handle damaged or leaking lithium ion batteries. Dispose of promptly and properly at end-of-life.

Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 60°C (140°F) or incinerate.

Keep away from children.

Your notebook is equipped with an internal backup memory battery. For changing this battery, please contact VAIO-Link:

<http://www.vaio-link.com>

In some areas the disposal of lithium ion batteries in household or business waste may be prohibited.

Use the public collection system.

Welcome

Congratulations on purchasing a Sony VAIO notebook. Sony has combined leading-edge technology in audio, video, computing and communications to provide you with state-of-the-art personal computing.

Here are just some of the features your VAIO notebook has to offer.

- ❑ **Exceptional performance** - Your PC includes a fast processor.
- ❑ **Portability** - The rechargeable battery pack provides hours of use without AC power.
- ❑ **Sony audio and video quality** - A high-resolution LCD screen enables you to take advantage of today's advanced multimedia applications, games, and entertainment software.
- ❑ **Multimedia features** – Enjoy audio and video CDs with the built-in speakers.
- ❑ **Interconnectivity** – Your computer has Memory Stick™ and i.LINK™ functionalities. Memory Stick is Sony's universal storage medium. i.LINK™ is a bidirectional digital interface for exchanging data.
- ❑ **Windows®** - Your system includes the latest operating system from Microsoft.
- ❑ **Communications** - Access popular online services, send and receive e-mails, browse the Internet...
- ❑ **Excellent customer support** - If you are experiencing any problems with your computer, please check the VAIO-Link web site for a possible solution:

<http://www.vaio-link.com>

Before contacting VAIO-Link, you may try to solve the problem by reading the User Guide or the manuals and help files for the peripherals or software.

Documentation pack

Your Documentation Pack contains paper and online user guides on your computer's hard drive.

Printed documentation

- ❑ A **Getting Started** brochure, where you find a brief description of the items in your box, some specifications of your notebook, and how to set up your notebook;
- ❑ A **Customer Guide**, where you find all the basic information you need to start using your notebook as well as troubleshooting and VAIO-Link information;
- ❑ Your **Sony Guarantee conditions**;
- ❑ A **Safety Regulations flyer**;
- ❑ A **Modem Regulations Flyer** applying to the modem.
- ❑ A **Bluetooth Safety Flyer** applying to the Bluetooth™ function.

Online documentation

- 1 The Sony Notebook User Guide:
 - ❑ **Using Your Sony Notebook** shows you how to use the standard components of your system. In this part of the manual you will also find out what you can do with a **Memory Stick™**.
 - ❑ **Connecting Peripheral Devices** explains how you can add functionality by connecting various peripherals.
 - ❑ **Getting Help** explains the support options available to you, and offers basic troubleshooting tips.
 - ❑ **Precautions** provides facts and advice about using your notebook.
 - ❑ **Specifications** provides details on your computer, drivers and accessories.
 - ❑ **Glossary** refers to terms used in this manual.
- 2 Refer to your **Software Guide** for information on the bundled software and the Sony applications.

- ❑ **About the Software** is a short description of the features of the software pre-installed on your system.
 - ❑ **Customizing your notebook** explains how to set your system and power management.
 - ❑ **Using the Product Recovery CD-ROMs** explains how to perform a system and application recovery.
- 3 Consult the **Online Help** files of the software you are using for detailed information on features and troubleshooting.
 - 4 Refer to the Microsoft **Quick Start** manual for more information on Windows.
 - 5 Go to <http://www.club-vaio.sony-europe.com> to find online tutorials about your favorite VAIO software.



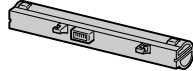
Your notebook and its accessories

The following hardware items are in the box :

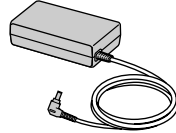
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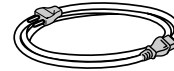
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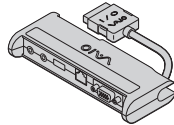
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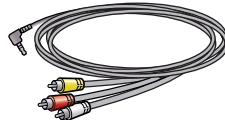
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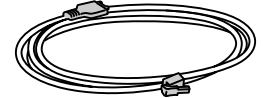
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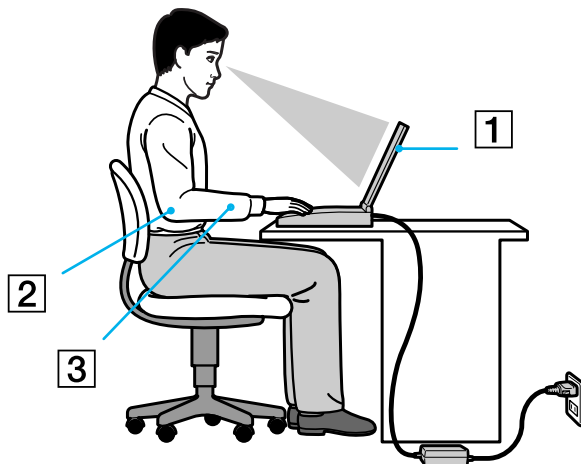
11



1	main unit	7	port replicator
2	rechargeable battery pack	8	AV cable
3	AC adapter	9	pointing stick covers
4	power cord	10	phone plug (country specific)
5	product recovery CD-ROMs	11	phone cable
6	documentation pack		

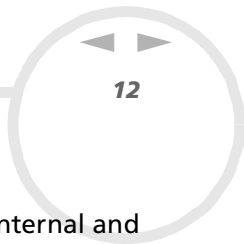
Ergonomic considerations

- ❑ You will be using your notebook as a portable device in a variety of environments. Whenever possible, you should attempt to take account of the following ergonomic considerations to both stationary and portable environments:



- ❑ **Position of your computer** – Place the computer directly in front of you (1). Keep your forearms horizontal (2), with your wrists in a neutral, comfortable position (3) while using the keyboard, touchpad, or external mouse. Let your upper arms hang naturally at your sides. Have breaks during sessions with your computer. Excessive use of the computer may strain muscles or tendons.
- ❑ **Furniture and posture** – Sit in a chair with good back support. Adjust the level of the chair so your feet are flat on the floor. A footrest may make you more comfortable. Sit in a relaxed, upright posture and avoid slouching forward or leaning far backwards.

- ❑ **Viewing angle of the computer's display** – Use the display's tilting feature to find the best position. You can reduce eye strain and muscle fatigue by adjusting the tilt of the display to the proper position. Adjust the brightness setting of the display as well.
- ❑ **Lighting** – Choose a location where windows and lights do not create glare and reflection on the display. Use indirect lighting to avoid bright spots on the display. You can also purchase accessories for your display that help reduce glare. Proper lighting adds to your comfort and work effectiveness.
- ❑ **Placement of an external display** – When using an external display, set the display at a comfortable viewing distance. Make sure the display screen is at eye level or slightly lower when you are sitting in front of the display.

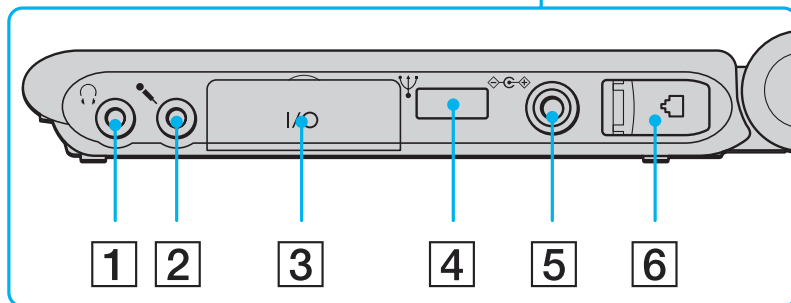
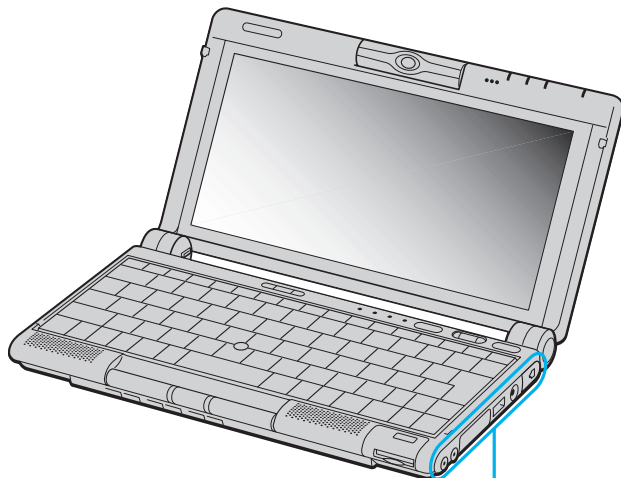


Using your notebook

This section describes how to start using your computer and how to use your computer's internal and external devices.

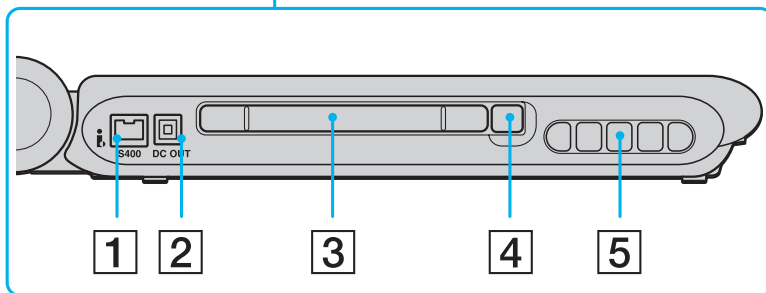
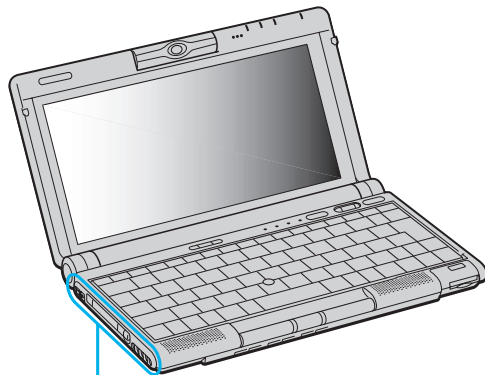
Locating controls and connectors

Right




1	headphone connector	(page 56)
2	microphone connector	(page 57)
3	port replicator connector	(page 50)
4	USB connector	(page 58)
5	DC In	(page 17)
6	phone line jack	(page 46)

Left

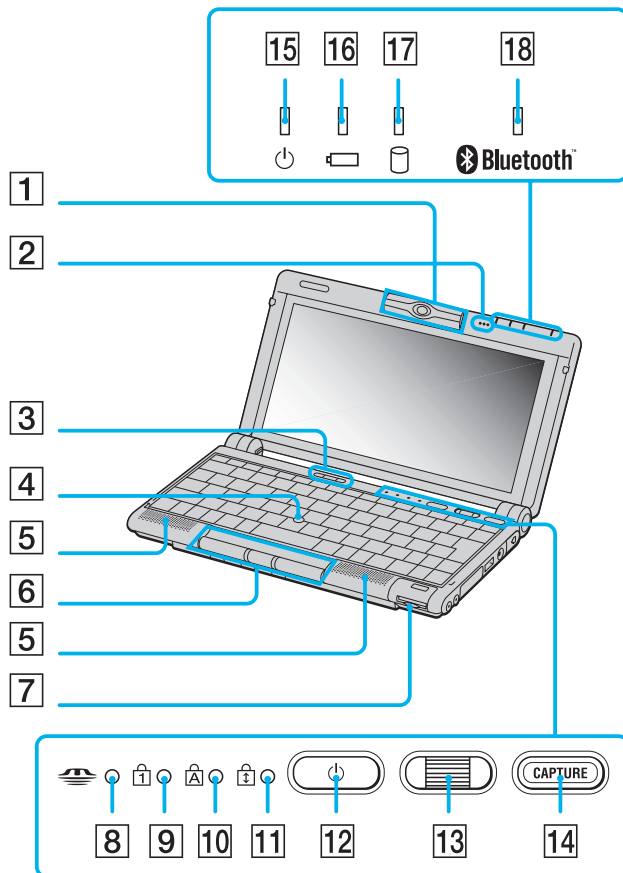


1	S400 i.LINK™ connector	(page 64)
2	VAIO peripheral original DC connector	(page 64)
3	PC Card slot	(page 35)
4	RELEASE button	(page 35)
5	ventilation slot	

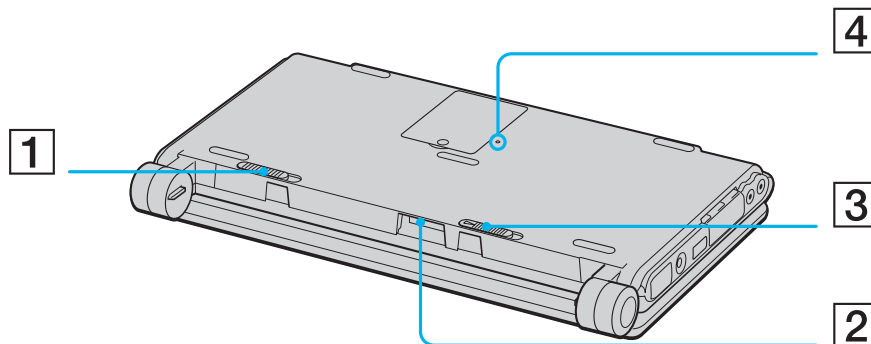
 There is a ventilation slot located near the PC Card slot. Do not cover the ventilation slot when the notebook is in use.



Front



1	built-in camera (Motion Eye)	
2	microphone	(page 57)
3	Bluetooth™ switch	(page 63)
4	pointing device	(page 29)
5	speakers	(page 56)
6	touchpad buttons	(page 29)
7	MagicGate Memory Stick™ slot window	(page 37)
8	MagicGate Memory Stick™ indicator	(page 27)
9	Num Lock indicator	(page 27)
10	Caps Lock indicator	(page 27)
11	Scroll Lock indicator	(page 27)
12	power button	(page 21)
13	Jog Dial	(page 31)
14	capture button	
15	power indicator	(page 27)
16	battery indicator	(page 27)
17	hard disk drive indicator	(page 27)
18	Bluetooth™ indicator	(page 27)

Bottom

1	battery release lever	(page 18)
2	battery connector	(page 18)
3	battery lock lever	(page 18)
4	reset switch	

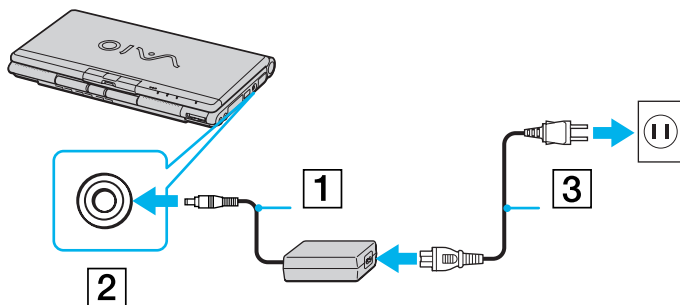
Connecting a power source


You can use either an AC adapter or a rechargeable battery pack as a power source.

Using the AC adapter

To use the AC adapter, proceed as follows:

- 1 Plug the cable attached to the AC adapter (1) into the DC In connector (2) on the computer.
- 2 Plug one end of the power cord (3) into the AC adapter.
- 3 Plug the other end of the power cord into an AC outlet.



-  Use your notebook only with the supplied AC adapter.
To disconnect your notebook completely from mains voltage, unplug the AC adapter.
Make sure that the socket outlet is easily accessible.

Using the battery pack

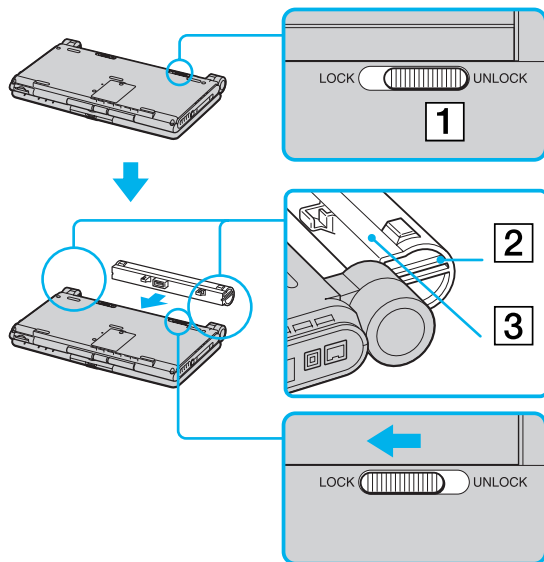
You can use a battery pack as a source of power.


The battery pack supplied with your computer is not fully charged at the time of purchase.

Inserting the battery pack

To insert the battery, proceed as follows:

- 1 Move the lock lever (1) on the bottom of the computer to the **Unlock** position.
- 2 Align the grooves (2) and tabs on the battery (3) with the tabs and notches on the back of the computer, and then slide the battery towards the computer until it clicks into place.
- 3 Slide the lock lever into the **Lock** position to secure the battery on the computer.



 When the computer is directly connected to AC power and has a battery pack inserted in the battery bay, it uses power from the AC outlet.

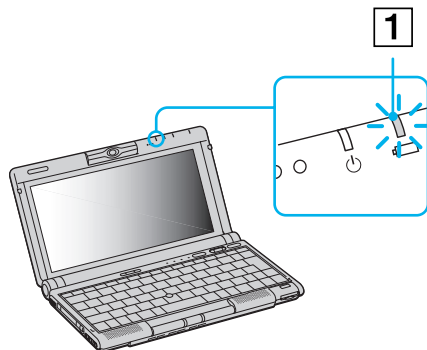
! Make sure the cover is closed before inserting the battery pack.

Charging the battery pack


To charge the battery pack, proceed as follows:

- 1 Connect the AC adapter to the computer.
- 2 Insert the battery pack.

The computer automatically charges the battery (the battery indicator (1) light flashes in a double blink pattern as the battery charges). When the battery is 85% full, the battery indicator light turns off. This process takes approximately 2.5 hours if your notebook is turned off. To charge the battery completely, continue charging for an additional hour.



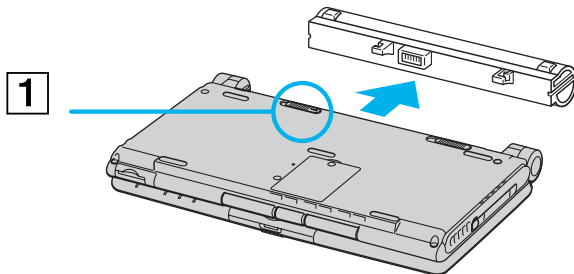
<i>battery indicator light status</i>	<i>meaning</i>
on	The computer is using battery power.
single blink	The battery is running out of power.
double blink	The battery is charging.
off	The computer is using AC power.


-  If you charge the battery when the notebook is switched off, the charging process will take approximately two and a half hours. When the battery is running out of power, both the battery and power indicators blink. Keep the battery pack in the computer while it is directly connected to AC power. The battery pack continues to charge while you are using the computer. If the battery level falls below 10%, you should either attach the AC adapter to recharge the battery or shut down your computer and insert a fully charged battery. You can extend battery life by changing the power management modes in the PowerPanel utility. The battery pack supplied with your computer is a lithium ion battery and can be recharged any time. Charging a partially discharged battery does not affect battery life. The battery indicator light is on while you use the battery pack as a power source. When the battery life is nearly depleted, the battery indicator starts flashing.

Removing the battery pack

To remove the battery pack, proceed as follows:

- 1 Turn off the computer.
- 2 Slide the release lever (1) to the **Unlock** position and slide the battery away from the computer.

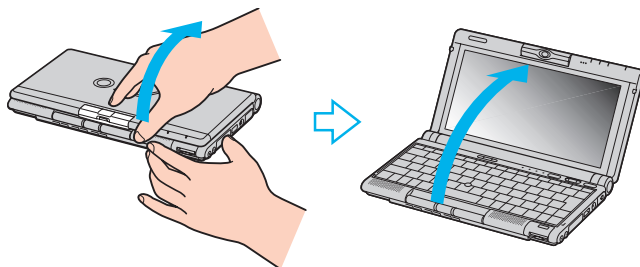


-  You may lose data if you remove the battery pack while the computer is on and not connected to the AC adapter or if you remove the battery while the computer is in **Standby** mode.

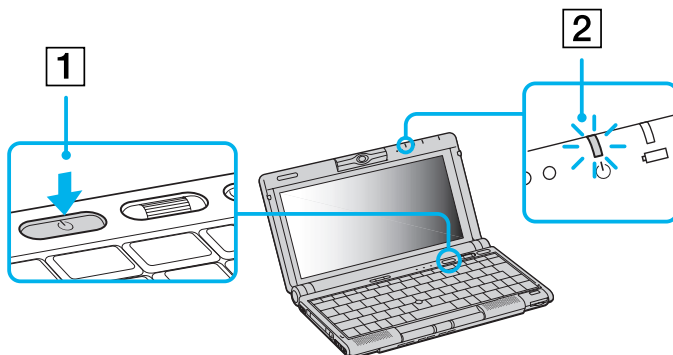
Starting your notebook

To start your computer, proceed as follows:

- 1 Hold the bottom of the computer firmly and open the cover.



- 2 Press the power button (1) of the computer until the green power indicator light (2) turns on.



- 3 If necessary, press **<Fn>+<F5>** to adjust the brightness controls for the LCD display. To increase the brightness, use the up or right arrow keys. To decrease, use the down or left arrow keys.



If you hold the power switch in the on position for more than four seconds, the computer will turn off.


Do not grab the camera lens when opening the cover, you may break the camera.

Shutting down your notebook

It is important that you shut down your computer properly in order not to lose unsaved data.

To shut down your computer, proceed as follows:

- 1 Click the **Turn Off Computer** button from the Windows® **Start** menu.
The **Turn off computer** dialog box appears.
- 2 Select **Turn Off**.
- 3 Wait for your computer to turn off automatically.
The power indicator turns off.
- 4 Turn off any peripheral connected to your computer.
- 5 To close your computer, make sure that the tabs on both sides of the display panel click into the grips.

 Respond to any prompts warning you to save documents.

If you are unable to shut down your computer:

- close all software in use,
- remove the PC Cards if inserted,
- disconnect any USB devices,
- Then press the <Ctrl>+<Alt>+<Delete> keys at the same time; the **Task Manager** appears, allowing you to close open applications and to shut down the computer. If this does not work, you can press the power switch and hold for four seconds. This will shut down the computer. This operation may result in data loss.

Do not close the cover when the built-in camera is turned to the outside.

During a period of inactivity, you can conserve battery life by using **Standby** mode.


Registering your notebook

You can take advantage of Sony's commitment to quality customer support and receive the following benefits by registering your computer:

- ❑ **VAIO-Link** – If you are experiencing any problems with your computer, you can check the VAIO-Link web site for a possible solution:
<http://www.vaio-link.com>
- ❑ **Guarantee** – Protect your investment. See the Guarantee sheet for the terms and conditions and refer to your Customer Service Guide for more information.

To register your Sony Notebook, proceed as follows:

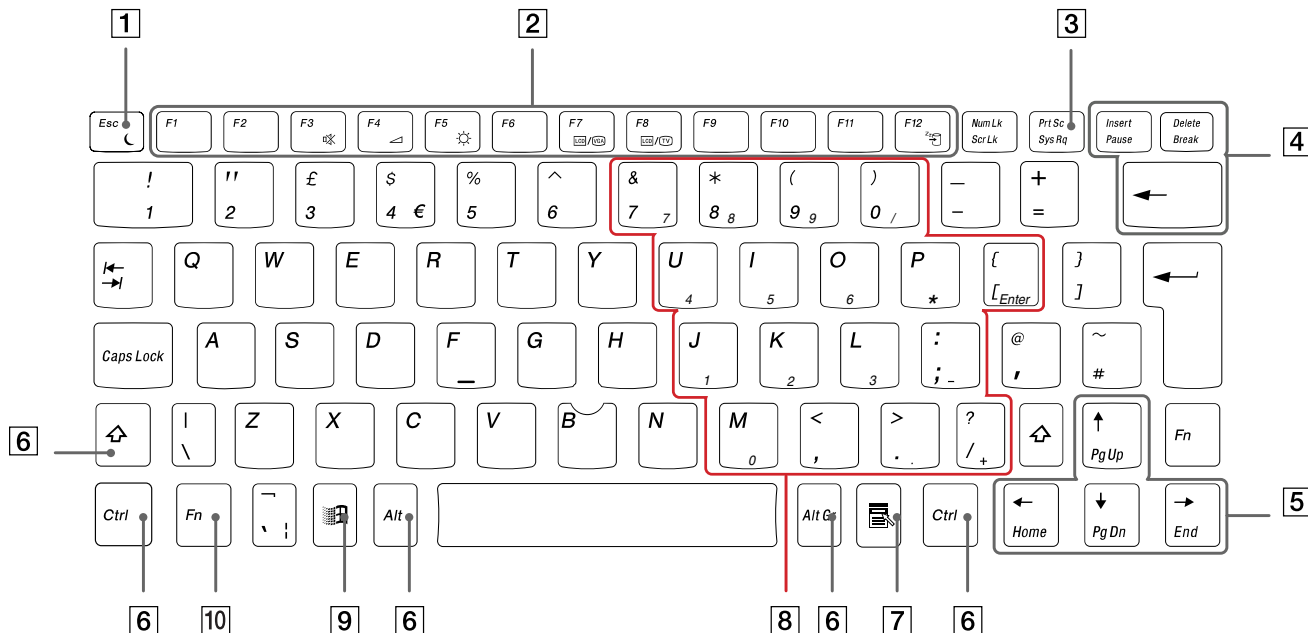
- 1 Click on the **VAIO Online Registration** icon in the **Start** menu,
- 2 Click **Next**,
- 3 Fill in your Registration card fields,
- 4 Scroll down to the bottom of the form and click **Send**,
- 5 Click **OK**.



 You must connect your phone line before using any online services, including the online registration service.

To access the online Registration web page, you must have a connection to the Internet.

Using the keyboard

Your keyboard is very similar to a desktop computer's, but the keyboard has additional keys that perform specific notebook-related tasks.







<i>Keys</i>	<i>Descriptions</i>
Escape key (1)	The <Esc> (Escape) key is used to cancel commands.
Function keys (2)	The twelve function keys along the top of the keyboard are used to perform designated tasks. For example, in many applications, <F1> is the Help key. The task associated with each function key may vary from one application to the next.
Print Screen key (3)	The <Print Screen> key takes an electronic snapshot of the screen and moves it to the Windows Clipboard. You can then paste the screenshot into a document and print it.
Correction keys (4)	The <Insert> , <Back Space> and <Delete> keys enable you to make corrections.
Fn key (5)	The <Fn> key is used in combination with other keys to execute commands.
Navigation keys (6)	These keys enable you to move the cursor on the screen.
Application key (7) 	The Application key displays a shortcut menu; pressing this key is equivalent to clicking the right mouse button.
Numeric keypad area (8)	Contains the keys found on a typical calculator. Use the numeric keypad area to type numbers or to perform mathematical calculations such as addition and subtraction. Note that you must press the <Num Lock> key to activate the numeric keypad. When you do so, the <Num Lock> indicator illuminates.
Operator keys (9)	Several keys are always used with at least one other key: <Ctrl> , <Alt> , and <Shift> . When held down with another key, the <Ctrl> (Control) and <Alt> (Alternate) keys offer another way to execute commands. For example, in many applications, instead of choosing the Save command from a menu, you can hold down <Ctrl> and press <S> (referred to as <Ctrl>+<S>). The <Shift> key is used to produce capital letters or special symbols such as @ and \$.
Windows® key (10) 	The key with the Windows® logo displays the Windows® Start menu; it is equivalent to clicking the Start button on the taskbar.





Combinations and functions with the Windows® key

Combinations Functions


















⊞ + F1	Displays the Windows Help and Support Center .
⊞ + Tab	Switches the selected button on the taskbar.
⊞ + E	Displays My Computer .
⊞ + F	Displays the Search Results window to find a file or folder. This is equivalent to selecting Search and then All files or folders from the Start menu.
⊞ + Ctrl + F	Displays the Search Results - Computer window where you can locate other computers.
⊞ + M	Minimizes all displayed windows.
Shift + ⊞ + M	Returns all minimized windows to their previous size.
⊞ + R	Displays the Run window. This is equivalent to selecting Run from the Start menu.


Indicators

Indicator	Functions
power 	Power on: lights green. Standby mode: flashes amber.
battery 	Indicates the status of the battery inserted in the computer.
hard disk 	Turns on when data is read from or written to the hard drive.
Bluetooth™ 	Turns on when the Bluetooth™ function is in use.

Light	On	Off
MagicGate Memory Stick™ 	Data is read from or written to the Memory Stick. Do not enter Standby mode or turn off the computer when this indicator light is on.	The Memory Stick is not being accessed.
Num Lock 	Turns on when the number keys in the numeric keypad are active.	Turns off when the alphanumeric character keys in the keypad area are active.
Caps Lock 	Turns on when the letters appear in uppercase as you type. The <Shift> key lowers the case of typed letters when Caps Lock is on.	Turns off when the letters appear in lowercase as you type (unless you hold down the <Shift> key).
Scroll Lock 	Turns on when the screen scrolls differently (depends on the application, no effect in many applications.)	Turns off when the information moves across the display normally.

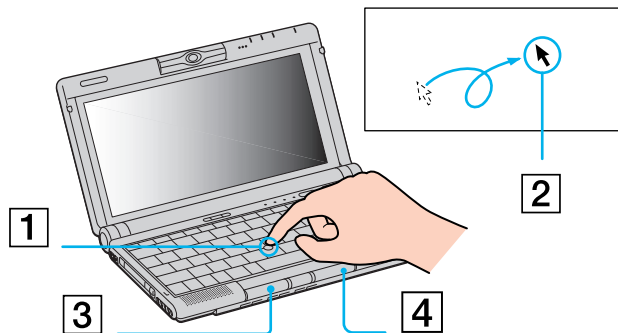
Combinations and functions with the Fn key

Combinations/ Feature	Functions
Fn +  (ESC) Standby mode	Puts the system into Standby mode, a power management state. To return the system to the active state, press any key.
Fn +  (F3) speaker switch	Toggles the built-in speaker on and off.
Fn +  (F4) speaker volume	Adjusts the built-in speaker volume. To increase volume, press <Fn>+<F4> and then  or  To decrease volume, press <Fn>+<F4> and then  or 
Fn +  (F5) brightness control	Adjusts the brightness of the LCD. To increase light intensity, press <Fn>+<F5> and then  or  To decrease light intensity, press <Fn>+<F5> and then  or 
Fn+  /  (F7) * switch to the external display	Toggles between the LCD, external display (connected to the Monitor connector) and both LCD and external display.
Fn+  /  (F8) * switch to the external display	Toggles between the LCD and both LCD and TV.
Fn+  (F12) Hibernate mode	Provides for the lowest level of power consumption. When you execute this command, the states of the system and of the peripheral devices are written to the hard disk and the system power is turned off. To return the system to its original state, use the power switch to turn on the power.

 * This function can only be used by the first user to log in. It will not work if you have switched to another account.
Some functions are not available until Windows® is launched.

Using the pointing device

The stick on the keyboard is a cursor-pointing device. You can point to, select, drag, and scroll objects on the screen using the stick.

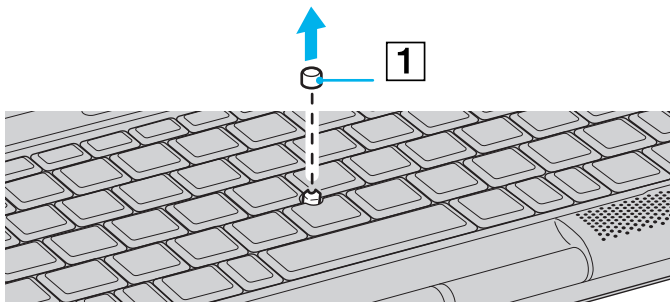


Action	Description
point	Press the stick (1) in the appropriate direction to position the pointer (2) on an item or object.
click	Press the left button (3) once.
double-click	Press the left button twice.
right-click	Press the right button (4) once. In many applications, this action displays a shortcut menu.
drag	Press the stick in the appropriate direction to position the pointer on an item or object. While holding the left button, press the stick, then let it go where needed.
scroll	Press the stick while pressing the center button.

 The scroll function is available only with applications that support a scroll-pointing feature.

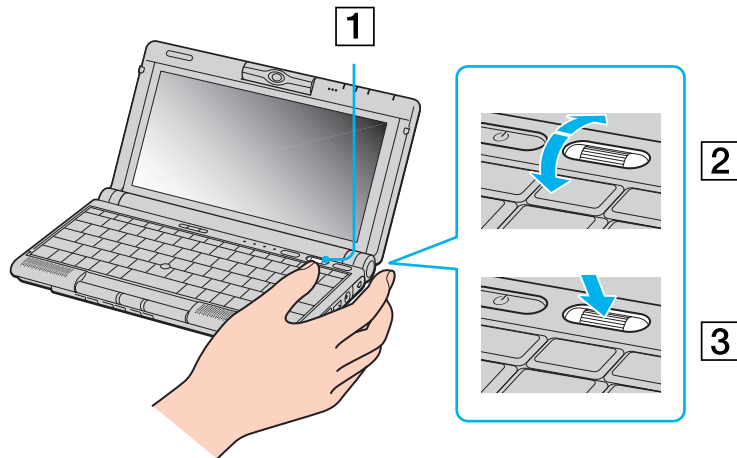
Replacing the pointing device cover

You can take off the cover (1) and replace it with an additional stick cover supplied with your computer.



Using the Jog Dial™

Your computer is equipped with a **Jog Dial™** (1). You can turn (2) and / or press (3) the Jog Dial™ to scroll the window, select an application, adjust the internal speaker volume, etc.






If you prefer, the Jog Dial™ window can always be displayed on the screen. This window has two modes: Launcher mode or Guide mode.



The Jog Dial™ window is in Launcher mode until you start an application or the Jog Dial™ window becomes active. When an arrow appears next to an item in the Jog Dial™ window, you can display a submenu for that item by selecting it and pressing the Jog Dial™.



The Jog Dial™ window switches to Guide mode when you start an application and its window becomes active. Depending on the application, the Jog Dial™ window displays different commands that you can select or execute by rotating or pressing the Jog Dial™.

 You can adjust the size of the Jog Dial™ window or close it. To display the Jog Dial™ window, double-click  or  in the system tray.

To use the Jog Dial™ in Launcher mode, proceed as follows:

- 1 Click the **Jog Dial™** window or press the **Jog Dial™** while pressing the <Ctrl> key to switch to Launcher mode.
- 2 Turn the **Jog Dial™** to select an item, then press the **Jog Dial™**.
The **Jog Dial™** window switches to Guide mode, and shows the **Jog Dial™** function.



- 3 Turn or press the Jog Dial™ to use the Jog Dial™ function.
- 4 To select another item, switch to Launcher mode and repeat this procedure.

Software supporting the Jog Dial™

If the Sony software supporting the **Jog Dial** is active, you can use **Jog Dial** functions allocated to each software.

Software not supporting Jog Dial™

If the software in use does not support the **Jog Dial**, you can scroll the window or adjust the window size as described below:

<i>Action</i>	<i>Description</i>
Turn the Jog Dial	Scrolls the window vertically. When several windows are displayed, the last selected window will be scrolled.
Press the Jog Dial	Maximizes the size of the active window. Press again to return to its normal size.
Press <Alt> and the Jog Dial	Minimizes the size of the active window. Press both <Alt> and the Jog Dial again to return to its normal size.
Press <Shift> and the Jog Dial	Ends software or programs in use.

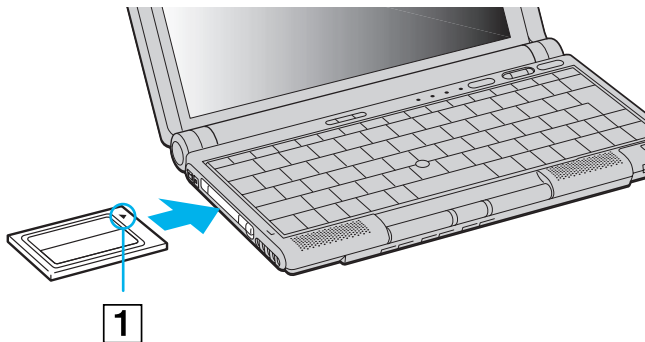
Using PC Cards

Your computer includes a PC Card slot. PC Cards allow you to connect portable external devices.

Inserting a PC Card

To insert a PC Card, proceed as follows:

- 1 Insert the PC Card into the PC Card slot, front label facing up (1).



- 2 Gently push the card into the slot until the card is fixed into the connector.



Some PC Cards may require you to disable idle devices when using the PC Card.

Make sure to use the most recent software driver provided by the PC Card manufacturer.

If an "!" mark appears in the **Device Manager** dialog box, remove the software driver and then reinstall it.

You do not need to shut down the computer before inserting or removing a PC Card.

Do not force a card into the slot. It may damage the connector pins. If you have difficulty inserting a card, check that you are inserting the card in the correct direction. See the manual supplied with your PC Card for more information on use.

For some PC Cards, if you alternate between normal power operation and the **Standby** or **Hibernate** power management modes while the card is inserted, you may find that a device connected to your system is not recognized. Reboot your system to correct the problem.

Do not put your notebook in a bag or a case with a PC Card inserted in the slot. Pressure or shock to the PC Card may damage your notebook.

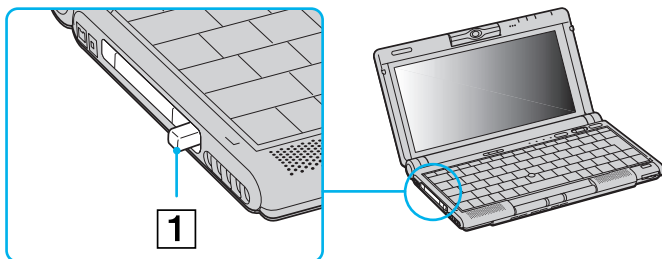
Removing a PC Card


If you unplug this device from the computer when turned on, your system might crash and you might lose unsaved data.

If your computer is turned off, you do not have to follow these instructions.

To remove a PC Card, proceed as follows:

- 1 Double-click the **Safely Remove Hardware** icon in the taskbar.
The **Safely Remove Hardware** window appears.
- 2 Select the hardware you want to unplug and click **Stop**.
The **Stop a Hardware device** dialog box appears.
- 3 Make sure that the device is selected and click **OK**.
The **Safe to Remove Hardware** message appears, confirming the device can be safely removed from the system.
- 4 Push the PC Card release button (1) and then press it again to eject the card.
- 5 Gently pull the card out.
- 6 Click **Close** to close the **Safely Remove Hardware** dialog box.



 While the card is inserted, your computer may not enter the **Hibernate** power management mode. It may enter **Standby** mode. It is recommended that you remove the card when your computer enters the **Hibernate** mode by pressing the **<Fn> + <F12>** keys or by using the **PowerPanel** utility, and when it is set to enter **Hibernate** automatically while using a battery as the source of power.

You may not be able to use some PC Cards or some functions within the PC Card with this computer.

Close all the applications that use the PC Card before removing the card. Otherwise, data may be lost.

Using Memory Stick™

Your VAIO notebook is designed to support the Memory Stick™. The Memory Stick™ is a compact, portable, and versatile device especially designed for exchanging and sharing digital data with compatible products. Because it is removable, it can be used for external data storage.

Use the flash memory technology to download anything that can be converted into digital data, such as pictures, music, words, sounds, movies and photographs.

Foreseen as the universal data storage device of the future, the Memory Stick™ can already be used with an ever-increasing range of compatible products, including:

- Audio systems
- Visual devices
- VAIO products
- CLIE handhelds
- Mobile phones.

There are currently two different types of Memory Stick™:

- The generic Memory Stick™, coloured blue or purple.
- The MagicGate Memory Stick™, coloured white.

 You can purchase Memory Sticks™ from the Sony Style website (<http://www.sonystyle-europe.com>), or from your local Sony dealer.

Why Memory Stick™?

Sony's vision is to expand the world of communication, promoting the portability of digital data. The Memory Stick™ is the resulting medium, through which digital devices can be instantly connected. With it, you can download data from any compatible device, then transfer it to another in a single and instant transfer.

The main advantages of the Memory Stick™ are its:

- ❑ **Compactness:** with dimensions of just 21.5 mm (W) x 2.8 mm (H) x 50 mm (D), compatible products can also be small, lightweight and attractive in their design.
- ❑ **Capacity:** its data capacity far exceeds that of a floppy disk.
- ❑ **Security:** its lock option means you can protect your data from accidental erasure.
- ❑ **Versatility:** memory capacity ranges from 4MB up to 128MB (the equivalent capacity of 88 floppy disks).
- ❑ **Reliability:** by way of protecting the hardware and its contents, the number of terminals is reduced to only 10 pins. This, and the overall robust structure of the stick, gives it a longer lifespan than other storage devices.
- ❑ **Durability:** the same Memory Stick™ can be used thousands of times.
- ❑ **Forward compatibility:** the Memory Stick's™ current format is designed to be compatible with future products and higher capacity Memory Sticks™.

The future of Memory Stick™

Memory Stick's™ potential is virtually unlimited, with the number of **compatible products** increasing rapidly in both personal and professional spheres.

The introduction of the 256 MB and 512 MB Memory Stick™ is anticipated in 2002, and a 1 gigabyte **capacity** Memory Stick™ is expected in 2003. Additionally, the native transfer speed of the Memory Stick™ will be increased to accommodate the increasing capacity. By the end of 2002, Memory Stick's™ **transfer speed** will be increased by eight times to a maximum of 20MB/sec.

Generic Memory Stick™

The original Memory Stick™, blue in colour, can be used to record image data taken with digital still cameras, etc. or data from the PC. With it, you can record, play back and transfer various kinds of data at any given time.




Because it is easy to remove and transport safely, you can use Memory Stick™ anywhere by inserting it into any compatible device to transfer and share the information you have saved.

For you, this means you can expand the capabilities of your VAIO computer in the following scenarios:

- ❑ With your still digital camera, share your holiday pictures instantly by e-mail.
- ❑ From your handycam to your VAIO, make the most of your captured moments with the VAIO's movie editing tools.
- ❑ Carry pictures on you by copying image files from the Internet to your VAIO and then to your CLIE handheld.
- ❑ With your voice recorder, add your voice to e-mails so your tone is never misunderstood.

The blue Memory Stick™ is currently available with a 4MB, 8MB, 16MB, 32MB, 64MB or a 128MB memory (the equivalent capacity of 88 floppy disks).

 Generic Memory Sticks™ cannot be used with the Memory Stick™ Walkman, or with data that is protected by copyright.

MagicGate Memory Stick™


The MagicGate Memory Stick™, white in colour, records PC and image data just like its blue counterpart; the difference is it uses the MagicGate copyright protection technology.




With this type of Memory Stick™, also called the MG Memory Stick™, you can enjoy the following features:

- ❑ 32MB, 64MB and 128MB capacity versions.
- ❑ Storage of up to 120 minutes of audio data.
- ❑ Download and save:
 - ❑ digital music
 - ❑ pictures
 - ❑ movies, and more.
- ❑ Combine data files to add music to your home movies, for example.
- ❑ Transfer and share data between several digital products.
- ❑ MagicGate Copyright Protection Technology.
- ❑ SDMI (Secure Digital Music Initiative) Compliance.
- ❑ SonicStage software.

So that you further distinguish a MagicGate Memory Stick™ from a generic one, look for:

- ❑ the  logo printed on it and a protruding dot located on the back.

 MagicGate is a copyright protection technology that complies with the standards set by SDMI (Secure Digital Music Initiative, an organization working to draw up industry standard specifications in order to protect copyrights of digital music).

The  logo indicates the copyright protection system devised by Sony. It is not meant to guarantee compatibility with other media.

MagicGate

MagicGate refers to the copyright protection technology used by the MagicGate Memory Stick™ and other MagicGate Memory Stick™ compatible devices.

The Memory Stick™ Walkman and MagicGate Memory Stick™ work together to check the data and ensure it complies with copyright protection.

If no problems are detected, the data is exchanged in encrypted form; if authentication is not passed, data cannot be exchanged or played back.

SonicStage

SonicStage uses the OpenMG copyright protection technology that is used to manage the digital music content downloaded to the PC from CDs, the Internet and/or other sources.

Software installed on the PC records music content in encrypted form onto the hard disk. As well as allowing you to enjoy music on the PC, this technology protects against unauthorized distribution on the Internet. Since it is compatible with MagicGate, you can use SonicStage to transfer music that you have downloaded onto your PC to your MG Memory Stick™, and play it back on other Magic Gate-equipped devices and media.

Copyright protection

People who create artistic works such as music are entitled to a "copyright", meaning that they have exclusive rights to dictate how their work is used. When they are created, artistic works are automatically protected by a copyright without having to submit notification or registration, and may not be used without the permission of the person who created the work.

In the music world, however, illegal acts of distributing music without the permission of the artist, particularly on the Internet, have recently been on the increase. That is why the Recording Industry Association of America (RIAA) took the initiative to organize a forum called Secure Music Digital Initiative (SDMI) to study technology for protecting copyrights during the electronic distribution of music.

Sony offers the MagicGate Memory Stick™ and Memory Stick™ Walkman with a copyright protection function that complies with SDMI standards, thereby providing an environment where individuals can record and enjoy third-party music data without worrying about copyright infringement.

 Artistic works that are recorded by individuals are permitted for private usage only.

Compatible devices

There are nearly 80 Memory Stick™-enabled products on the market or announced for introduction worldwide, ranging from camcorders and portable music players to voice recorders and many other electronic devices.

You can currently use Memory Sticks™ with the following Sony products:

Visual:

- Cybershot digital camera
- Mavica digital camera
- PC, TRV and VX series digital video cameras
- LC data projector

Audio:

- MS Walkman
- MS Hi-fi system
- Network Walkmans
- Voice recorders

Other:

- VAIO notebooks
- VAIO desktops
- CLIE Handheld Entertainment Organiser

- ❑ Sony mobile phones
- ❑ Digital printers
- ❑ AIBO, the Sony Entertainment Robot

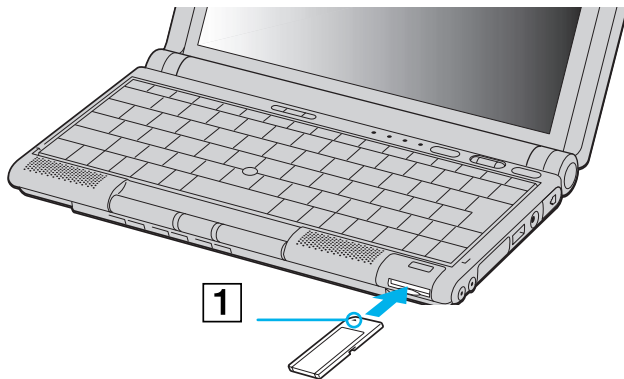
To find out more about the products available in your country, go to:

<http://www.sonystyle-europe.com>

Inserting a Memory Stick™

To insert a Memory Stick™, proceed as follows:

- 1 Gently insert your Memory Stick™ (1) until it clicks into place.



When the Memory Stick™ is connected properly, you can see its contents by clicking the **Removable Disk** icon in My Computer.

If you cannot find the Removable Disk icon in My Computer, proceed as follows:

- 1 Go to **Control Panel**.
- 2 Click **Performance and Maintenance**.
- 3 Click the **System** icon.
- 4 Click **Hardware**, then **Device Manager**.
- 5 Select the device.
- 6 Click **Action** and then **Scan for hardware changes**.

! Hold the Memory Stick™ with the arrow pointing in the correct direction when you insert it into the slot. To avoid damaging the computer or the Memory Stick, do not force the Memory Stick into the slot if it does not insert smoothly.

! If your computer is in **Ultimate Battery Life** mode, Memory Stick™ cannot be used. Select another mode.

Removing a Memory Stick™

To remove a Memory Stick™, proceed as follows:

- 1 Make sure the access light is off and gently press the Memory Stick™ inwards.
- 2 When it comes out, pull it out.
The **Memory Stick™** window closes automatically when you remove the Memory Stick™.

 Always remove the Memory Stick™ gently, or it may pop out unexpectedly.

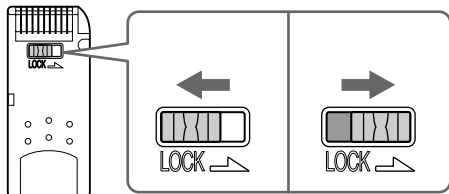
It is recommended that you remove the Memory Stick™ before shutting down the computer.

! To prevent the possible loss of data, do not remove a Memory Stick™ when the Memory Stick™ access light is on. Large image files require more time to store on a Memory Stick™, so always check the Memory Stick™ access indicator and make sure that it is off before you remove the Memory Stick™.

Write-protecting a Memory Stick™

Memory Sticks™ are designed with an erasure prevention switch to protect valuable data from accidental erasure or overwriting.

Move the tab to the right or left to set or release write-protection. When the erasure prevention switch is off, data can be saved on the Memory Stick™. When the erasure prevention switch is on, data can be read from but not saved on the Memory Stick™.



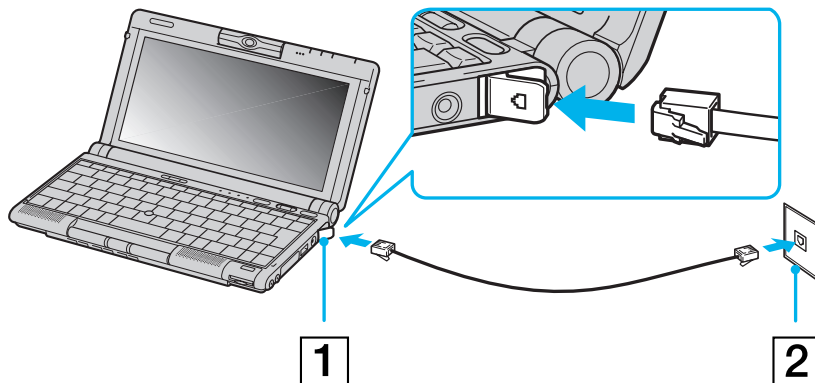
Using the modem


Your notebook is equipped with an internal modem.

You need to connect to a phone line to take advantage of online services and the Internet, but also to register your computer and software online, and to contact VAIO-Link.

To connect a phone line, proceed as follows:

- 1 Plug one end of the phone cable (1) into the phone line jack on the computer.
- 2 Plug the other end into the wall jack (2).



 Before using the modem, make sure that the modem's country/region settings are set for the country where you are using it. To configure the modem specific country/region settings, go to **Control Panel, Phone and Modem Options** and click **New Location** or **Edit Location**, then adjust the country/region settings. Click **Apply** and **OK** to save the selected configuration.

Read the Modem Safety Flyer before using the modem functionality.

A country-specific phone plug is supplied with your VAIO notebook, allowing you to plug the phone line into the wall jack. We recommend that you use the supplied plug, because the usage of any other phone plug can decrease the connection quality.

Do not pull the flexible cover too forcefully.

Your computer cannot be connected to a coin-operated telephone, and may not work with multiple phone lines or a private branch exchange (PBX). If you connect the modem to a parallel connected phone line, the modem or the other connected device may not function properly. Some of these connections may result in excess electrical current and could cause a malfunction in the internal modem.

Only DTMF (Dual Tone Multi Frequency) signalling (tone dialling) is supported.

Using power saving modes

When you use a battery as the source of power for your computer, you can take advantage of power management settings to conserve battery life. In addition to the normal operating mode, which allows you to turn off specific devices, your computer has two distinct power saving modes: **Standby** and **Hibernate** mode.

When using battery power, you should be aware that the computer automatically enters **Hibernate** mode when the remaining battery charge drops below 7 percent, regardless of the power management setting you select.



If the battery level falls below 10 percent, you should either attach the AC adapter to recharge the battery or shut down your computer and insert a fully charged battery.

Using Normal mode

This is the normal state of your computer when it is in use. The green power indicator light is on in this mode. To save power, you can turn off a specific device such as the LCD or the hard disk.

Using Standby mode

The computer saves the current state of the system in RAM and switches off power to the CPU. The amber power light flashes in this mode.

To activate Standby mode, proceed as follows:

Press **<Fn>+<Esc>** together.

Alternatively,

- 1 Click **Start** and then **Turn Off Computer**.
- 2 In the **Turn off computer** screen, press **Standby**.
The computer enters Standby mode.

To return to Normal mode, press any key.

Using Hibernate mode

The state of the system is saved on the hard disk and power is turned off. The power indicator light is off in this mode.

To activate Hibernate mode, proceed as follows:

Press **<Fn>+<F12>** together.

Alternatively,

Click **Start**, and then **Turn Off Computer**.

In the **Turn off computer** screen, hold down the **<Shift>** key and press **Hibernate**.
The computer enters Hibernate mode.

To return to **Normal** mode, proceed as follows:

Turn on the computer by pressing the power button.

The computer returns to its previous state.

 When the computer is in **Hibernate** mode, you cannot insert a disk.

Hibernate mode requires more time than **Standby** mode to be activated.

It takes more time to return to **Normal** mode from **Hibernate** mode than from **Standby** mode.

Hibernate mode uses no power at all unlike **Standby** mode.

Connecting peripheral devices

You can add functionality to your computer by connecting or using any of these peripherals and enjoy the software described in the About the software on your Sony Notebook user guide.

Connecting a port replicator ([page 50](#))

Connecting an external display ([page 52](#))

Connecting external speakers ([page 56](#))

Connecting an external microphone ([page 57](#))

Connecting a Universal Serial Bus (USB) device ([page 58](#))

Connecting a CD-ROM drive ([page 61](#))

Connecting a printer ([page 61](#))

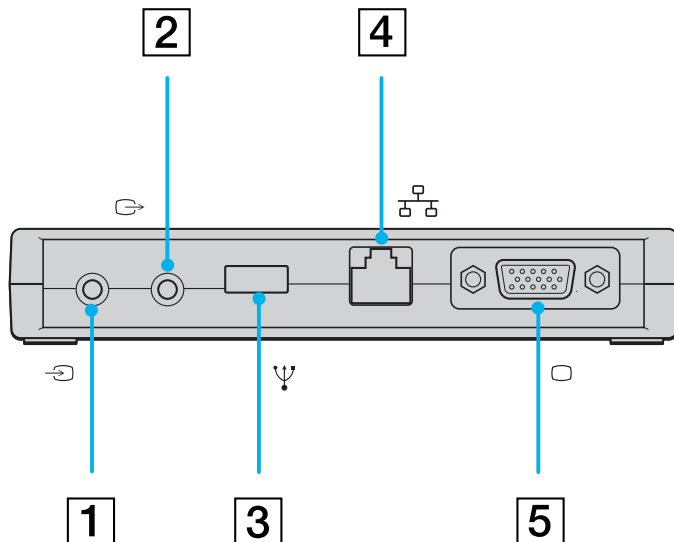
Connecting a Bluetooth™ device to your notebook ([page 63](#))

Connecting an i.LINK™ device ([page 64](#))

Connecting to a network (LAN) ([page 70](#))

Connecting a port replicator

Your notebook supports the use of a bundled port replicator. Attaching a port replicator enables you to connect additional peripherals to your computer, such as an external display.

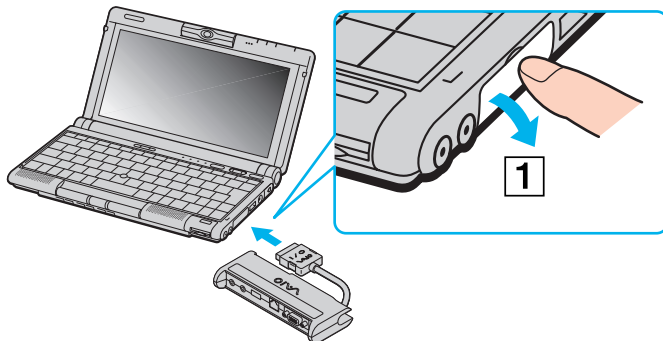


1	AV IN connector		4	Ethernet connector (network)	(page 70)
2	AV OUT connector	(page 54)	5	Monitor/VGA connector	(page 52)
3	USB port	(page 58)			

Attaching your computer to the port replicator

To attach your computer to the port replicator, proceed as follows:

- 1 Open the port replicator connector (1).
- 2 Connect the port replicator plug into the port replicator connector.

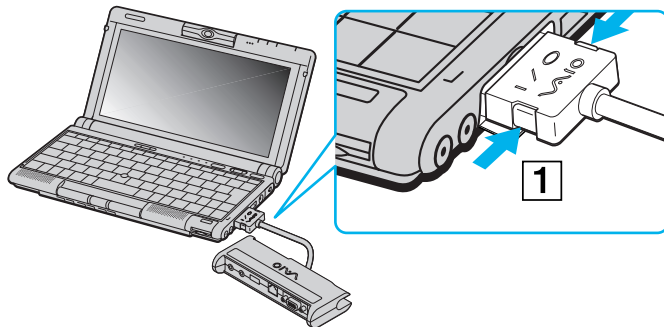


 If you cannot use the connectors on the port replicator, shut down the computer and restart it.

Disconnecting your computer from the port replicator

To disconnect your computer from the port replicator, proceed as follows:

- 1 Disconnect the port replicator plug (1) from the port replicator connector by pressing its sides.



- 2 Close the port replicator connector cover.

Connecting an external display

You can connect an external display to your notebook. For example, you can use your computer with the following devices:

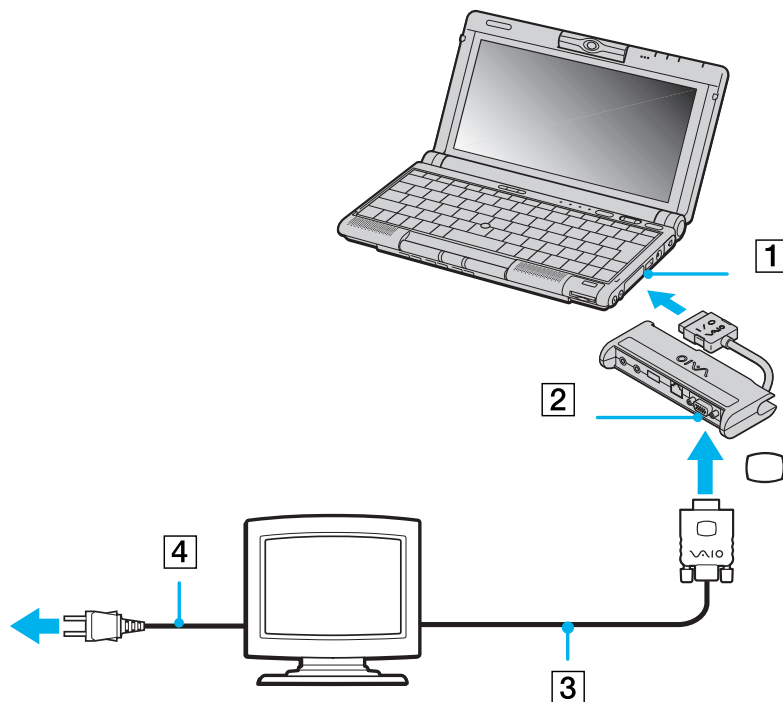
- Computer display;
- TV;
- Projector.


Connecting a computer display

To connect a computer display, proceed as follows:

- 1 Plug the supplied port replicator into the notebook's port replicator connector (1).
- 2 Plug the display cable into the port replicator's monitor/VGA connector (2).

- 3 If necessary, plug one end of the display power cord (3) into the display, and the other end (4) into an AC outlet.

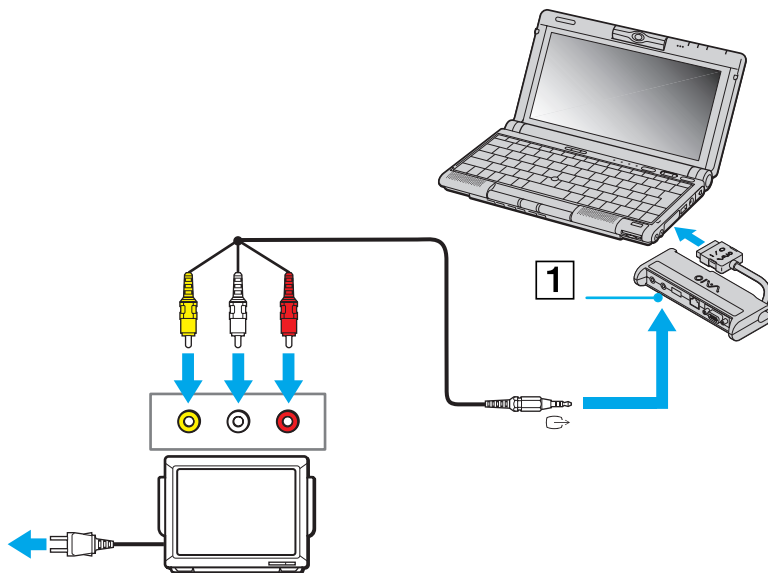



-  Before you connect peripherals, turn off the computer and all peripherals.
Connect the power cord only after connecting all cables.
Turn on the computer only after turning on all peripherals.

Connecting a TV

To connect a TV to your notebook, proceed as follows:



- 1 Plug the supplied port replicator into the notebook's port replicator connector.
- 2 Plug the supplied AV cable (1) into the port replicator's AV out connector (yellow).
- 3 Plug the three-pin jack of the AV cable to the TV as shown below.

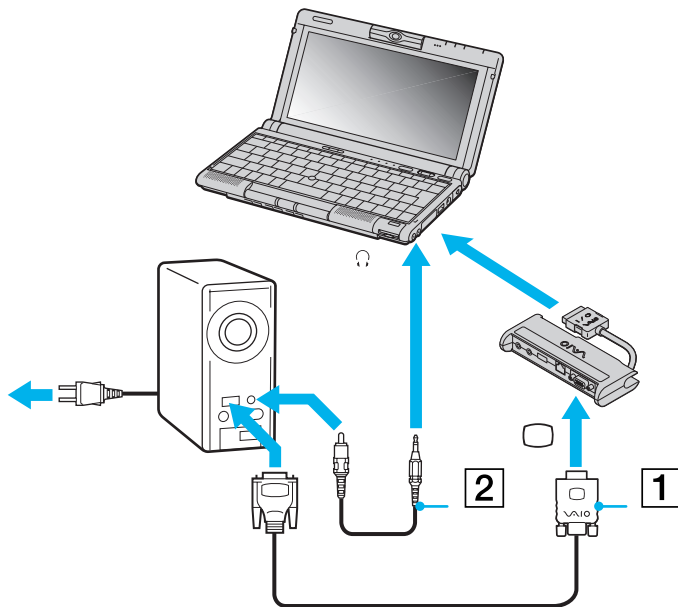


 640x480 dots of your computer screen will be displayed on TV. The rest can be seen by scrolling.

Connecting a projector

To connect a projector, proceed as follows:

- 1 Plug the supplied port replicator into the notebook's port replicator connector.
- 2 Plug the display signal cable (1) into the VGA Out connector of the port replicator.
- 3 Plug the speaker audio cable (2) into the earphone connector identified by the  symbol.
- 4 Plug the microphone cable into the microphone connector identified by the .

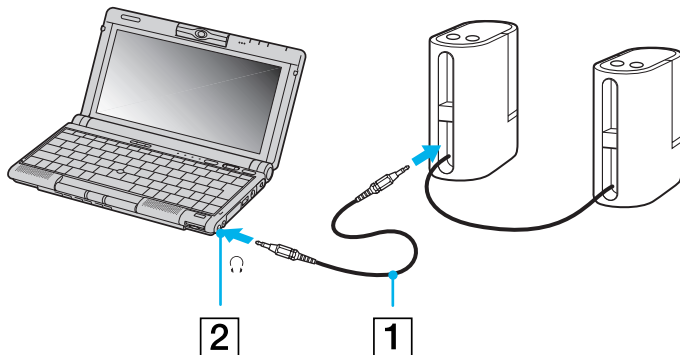



Connecting external speakers

You can enhance the sound quality of your computer by connecting external speakers.

To connect external speakers, proceed as follows:

- 1 Plug the speaker cable (1) into the earphone connector (2).
- 2 Plug the other end of the speaker cable into the external speaker.
- 3 Turn down the volume of the speakers before you turn them on.



 Make sure your speakers are designed for computer use.

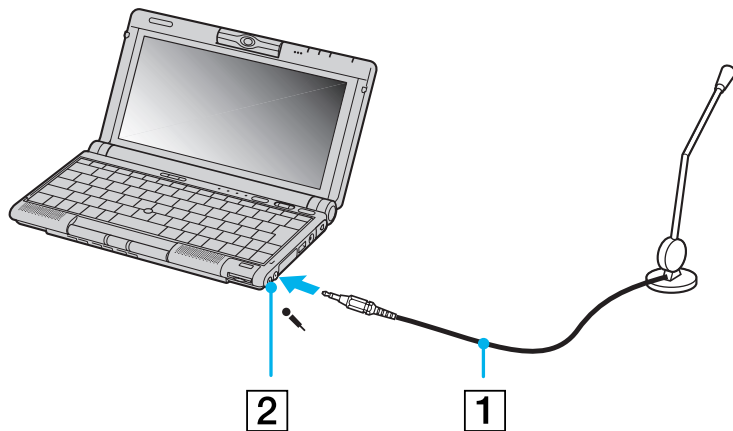
Do not place diskettes on the speakers; their magnetic field may damage the data on the diskettes.


Connecting an external microphone

Your VAIO notebook contains an internal microphone. If you need to use a sound input device, for example to chat on the Internet, you can also plug in an external microphone.

To connect an external microphone, proceed as follows:

Plug the microphone cable (1) into the microphone connector (2) identified by the  symbol.



 Make sure your microphone is designed for computer use.

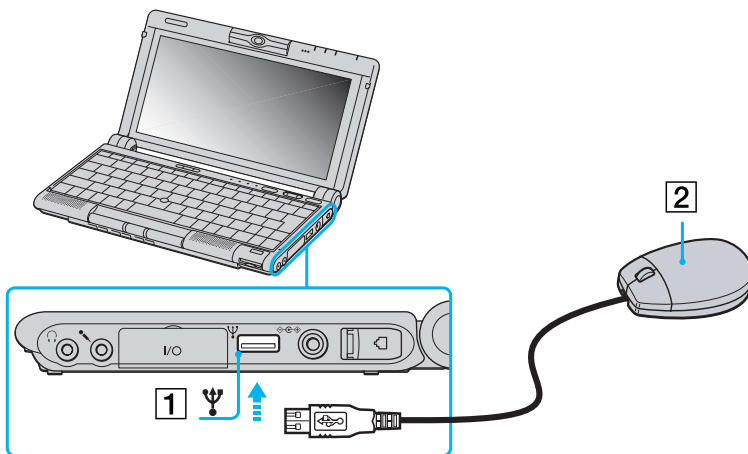
Connecting a Universal Serial Bus (USB) device


You can connect a USB device (e.g. mouse, floppy disk drive...) to your computer. You do not need to shut down the computer before connecting or disconnecting a USB peripheral. When you start your notebook with a USB hub connected to it, make sure that a device is connected to the USB hub. If you encounter problems booting when a USB hub is connected to your notebook, unplug the hub and reboot.

Connecting a USB mouse

To connect a USB mouse, proceed as follows:

Plug the USB cable (1) into the USB connector (2) identified by the  symbol.




 You can connect the optional Sony USB mouse (PCGA-UMS1 series). As the driver for this mouse is preinstalled on your computer, you can use the mouse by just connecting it. Your computer does not include any Serial or PS/2 connectors.

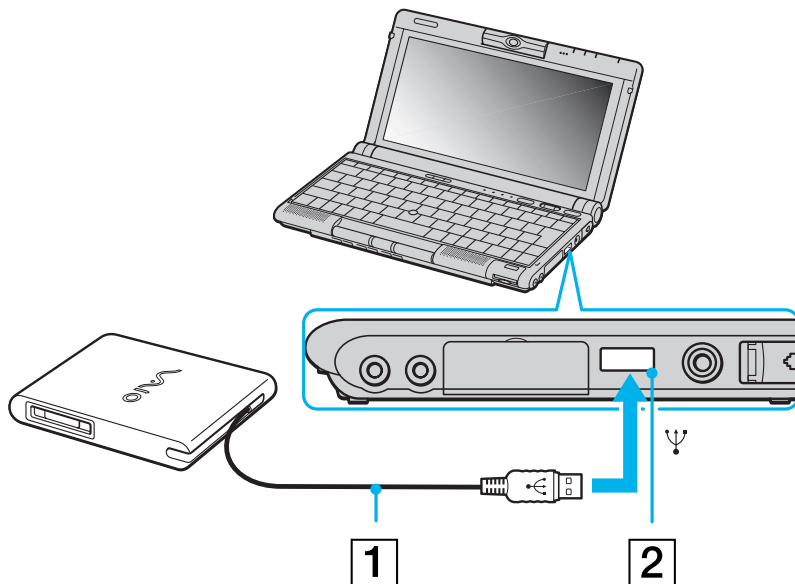
Using a USB floppy disk drive

You can connect a floppy disk drive to the USB connector on your computer.

Connecting the floppy disk drive

To connect the floppy disk drive, proceed as follows:

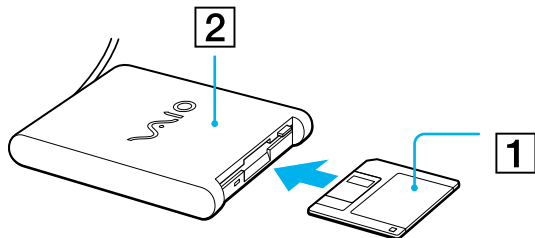
Plug the floppy disk drive cable (1) into the USB connector (2) identified by the  symbol. The VAIO logo on the disk drive should be facing up.



Inserting a diskette

To insert a diskette, proceed as follows:

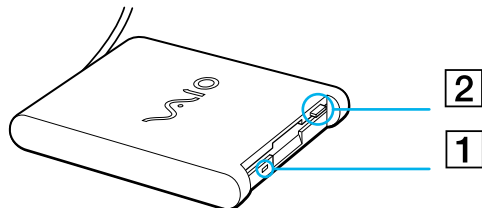
- 1 Hold the diskette (1) with the label side facing up.
- 2 Gently push the diskette into the drive (2) until it clicks into place.



Removing a diskette

To remove a diskette, proceed as follows:

When you finish using the diskette, wait until the LED indicator (1) turns off and then press the Eject button (2) to remove the diskette.



 Before pressing the Eject button, make sure that the LED indicator is turned off.

If the diskette does not come out by pressing the Eject button, disconnect the floppy disk drive from the computer.


! Do not press the Eject button while the LED indicator is on. It may damage the diskette.

Removing the floppy disk drive

If the floppy disk drive is not removed properly, your system may crash and you may lose data that you did not save before.

To remove the floppy disk drive, proceed as follows:

- 1 If your computer is off, you can directly unplug the USB cable from the computer.
- 2 If your computer is on, wait until the LED indicator turns off and double-click the **Safely Remove Hardware** icon in the system tray.
- 3 Select the floppy disk drive and click **Stop**.
- 4 Click **OK**.
- 5 When you see the message **Safe to Remove Hardware**, you can unplug the USB cable from the computer.

 To carry your floppy disk drive when you have finished using it, fold the floppy disk cable into the compartment on the side of the floppy disk drive.

Connecting a CD-ROM drive

You can connect an i.LINK™ drive to your notebook to use as a CD-ROM drive for reading CD-ROMs, audio-CDs and CD extras. See the section **Connecting an external i.LINK™ drive** for details.


Connecting a printer

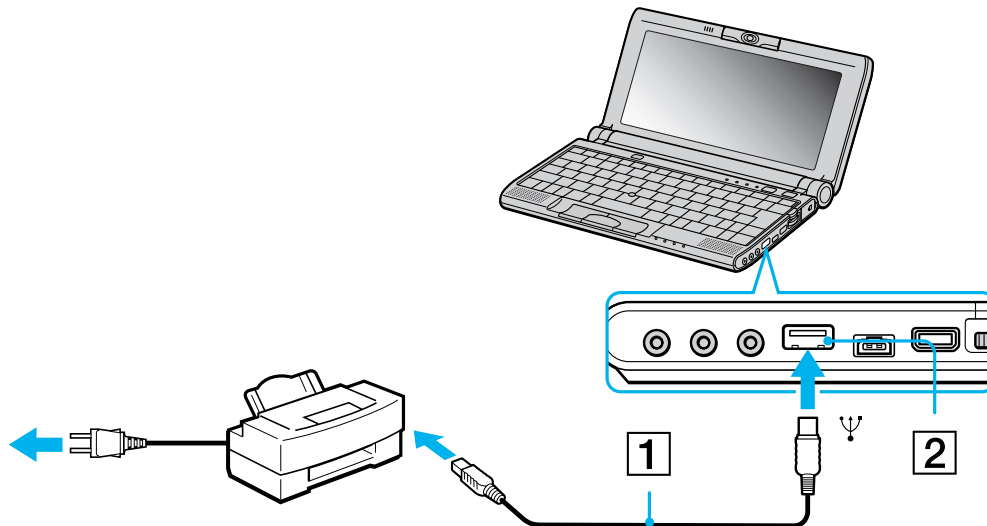
You can connect a Windows-compatible printer to your computer to print documents.

Connecting a printer using the USB connector

You can connect a USB printer compatible with your version of Windows® to your computer.

To connect a printer using the USB connector, proceed as follows:

Plug an optional USB printer cable (1) into the USB connector (2) identified by the  symbol on your computer and printer.

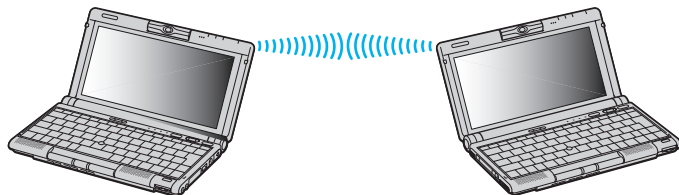



Turn off your computer and the printer, unplug the AC adapter and the power cord before connecting the printer.

Connecting a Bluetooth™ device to your notebook

The Bluetooth™ wireless technology enables you to establish a wireless communication between your notebook and other Bluetooth™ devices such as a notebook, a mobile phone or a modem station without any cable within a 10 to 100 metres range in open space.

All Bluetooth™ communications are made in conjunction with the **BlueSpace** software.



 The 2.4 GHz band which Bluetooth™ devices or wireless LAN devices use is used by various devices. Bluetooth™ devices use the technology to minimize the interference from other devices that use the same wavelength. Communication speed and distances can be inferior to the standard values. Interference from other devices may also stop communications.

The Bluetooth™ modem station (PCGA-BM1) software is available on your notebook's hard drive, so you do not have to install it from the CD-ROM attached to the Bluetooth™ modem station (PCGA- BM1).

Read the Bluetooth™ Safety Flyer before using the Bluetooth™ functionality.

- ! The Bluetooth™ functions may not work depending on the devices or the software version used.
- ! When you purchase Bluetooth™ devices, check their operating conditions.

Bluetooth™ security

The Bluetooth™ wireless technology has an authentication function which allows you to make sure with whom you communicate. With the authentication function, you can prevent any anonymous Bluetooth™ device from accessing your notebook.

The first time two Bluetooth™ devices communicate, a common Passkey should be determined for both devices to be registered. Once a device is registered, there is no need to reenter the Passkey.

You can change your settings in order not to be discovered by other Bluetooth™ devices or you can set a limit. For more information, see the **BlueSpace** online help.

Connecting an i.LINK™ device

Your computer includes an i.LINK™ (IEEE1394) connector, which you can use to connect to an i.LINK™ device such as a digital video camera recorder or to connect two VAIO notebooks in order to copy, delete or edit files.

The i.LINK™ connector supports transfer rates up to 400 Mbps; however, the actual transfer rate depends on the transfer rate of the external device.

i.LINK™ cables compatible with your VAIO notebook include cables with the following part numbers: VMC-IL4415A (a 1.5 meter cable with a 4-pin connector at each end), VMC-IL4408Series (a 0.8 meter cable with a 4-pin connector at each end).



An i.LINK™ connection with other compatible devices is not fully guaranteed.

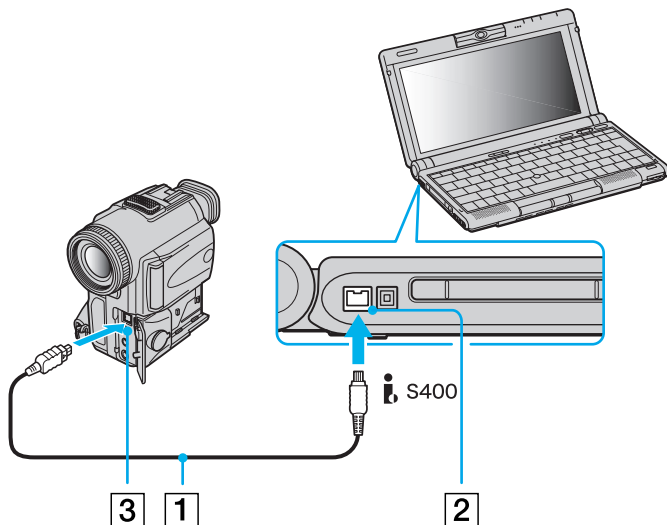
The i.LINK™ connection varies depending on the software applications, operating system and i.LINK™-compatible devices you use. Refer to the documentation that came with your software for more information.

Check the working conditions and OS compatibility of i.LINK™-compatible PC peripherals (HDD, CD-RW drive etc.) before you connect them to your notebook.

Connecting a digital video camera recorder

To connect a digital video camera recorder, proceed as follows:

- 1 Plug one end of the i.LINK™ cable (1) into the i.LINK™ connector (2) of the computer and the other end into the DV Out connector (3) on the digital video camera recorder.



- 2 Launch the DVgate application.

 On Sony digital video cameras, connectors labeled **DV Out**, **DV In/Out** or **i.LINK™** are i.LINK™-compatible.

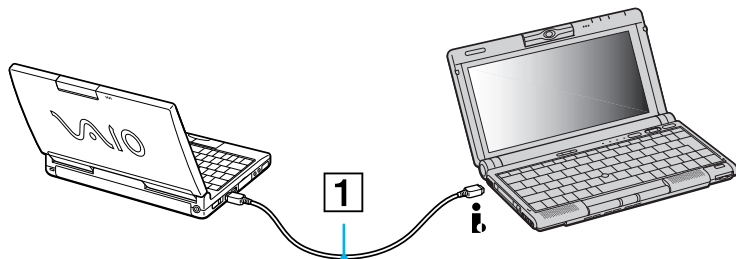
The Sony digital video camera recorder is an example; your digital video camera recorder may need to be connected differently.

If your digital video camera recorder includes a Memory Stick™ slot, you can copy images from it to your computer via a Memory Stick™. To do so, simply copy images on the Memory Stick™, then insert it into the Memory Stick™ slot of your computer.

Connecting two VAIO notebooks

You can connect your notebook to another VAIO notebook using an i.LINK™ cable (1) (not supplied). In this way, you can copy, edit or delete files on another VAIO notebook.

You can also print a document on a printer connected to another VAIO computer.



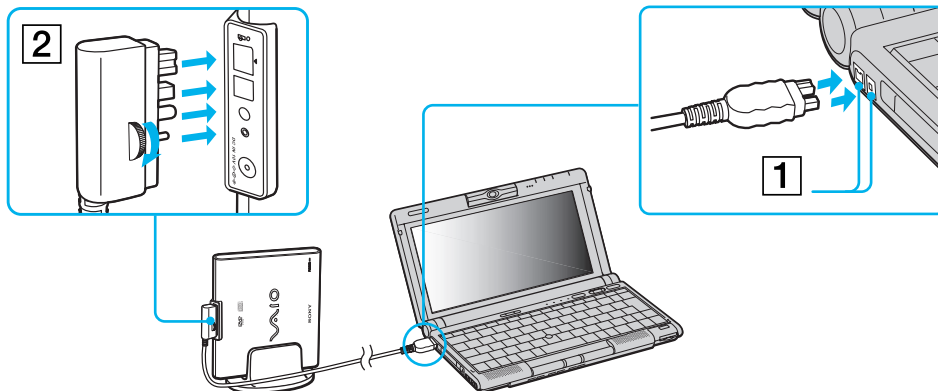
Connecting an optional external i.LINK™ drive

You can connect an optional external i.LINK™ drive (CD-RW/DVD) to your computer. Next to your computer's S400 i.LINK™ connector is a VAIO peripheral original connector.

The i.LINK™ drive's original cable has a two-pin plug that has to be connected into both the S400 i.LINK™ connector and the VAIO peripheral original connector.

To connect an external i.LINK™ drive to your notebook, proceed as follows:

- 1 Plug the two-pin end (1) of the i.LINK™ drive's original cable into the notebook's S400 i.LINK™ connector and the VAIO peripheral original connector.
- 2 If this is not done, plug the four-pin end (2) of the i.LINK™ drive's original cable into the i.LINK™ drive.



Using the DVD function

To achieve optimum performance when playing **DVD-ROM** discs, you should follow these recommendations.

- ❑ You can play DVDs using the DVD-ROM drive and the WinDVD software. See the help file on the WinDVD software for details.
- ❑ Close all open applications before playing a DVD-ROM movie.
- ❑ When playing DVD movies on battery power, set the power management profile to DVD. With other profiles, the movies can be choppy.
- ❑ Do not switch power saving modes while playing a DVD video.
- ❑ If the virus checker is active, you need to disable it.
- ❑ Do not use resident disc utilities or resident utilities to speed up the access of discs, because they may cause the system to become unstable.
- ❑ Make sure that the screensaver is deactivated.
- ❑ Region codes indicators are labelled on the DVD discs to indicate in which region and on what type of player you can play the disc. Unless a '2' (Europe belongs to region '2') or 'all' (this means that you can play this DVD everywhere in the world) is labelled on your DVD disc or on the packaging, you cannot play the disc on this player.
- ❑ Do not try to change the region code settings of the DVD-ROM drive. Any difficulties caused by changing the region code settings of DVD-ROM drive are out of warranty.

Using the CD-RW function

To burn CDs, you can use CD-RW and CD-R discs:

- ❑ The **CD-RW** (CD-ReWritable) disc is a data memory medium that can be used to write, erase and rewrite a program or other data.

- ❑ The **CD-R** (CD-Recordable) disc is a data memory medium that can be used to write a program or other data, but once only.


To achieve optimum performance when writing data on a CD-RW disc, follow these recommendations :

- ❑ Before writing to a new CD-RW, you must first format the disc. If you do not format the disc, your computer will not recognize it.
- ❑ To make a CD-R's data readable on a CD-ROM drive, you need to close the session when you eject it. To complete this process, follow the instructions included with your software.
- ❑ Only use circular discs. Do not use discs with any other shape (star, heart, card, etc.), as this may damage the CD-RW drive.
- ❑ Do not strike or shake the computer while writing data to a disc.
- ❑ For optimal writing speed, deactivate the screensaver before writing data to a disc.
- ❑ Memory-resident disc utilities may cause unstable operation or data loss. Deactivate these utilities before writing data to a disc.
- ❑ When using a software application to burn CDs, be sure to exit and close all other applications.
- ❑ Exit anti-virus software before writing data to a disc.
- ❑ Never touch the surface of the disc. Fingerprints and dust on the surface of a disc may cause writing errors.
- ❑ Always use the AC adapter as the power source for your computer when you write data to a CD-RW or CD-R.




Connecting to a network (LAN)

Your port replicator contains an Ethernet connector. You can thus connect your notebook to 10BASE-T/100BASE-TX-type networks via an Ethernet network cable. For the detailed settings and devices needed to connect to the network, consult your Network Administrator.

 For more information about connecting your notebook to the network, please consult the Hardware troubleshooting section of the Vaio-Link website:

[How to troubleshoot network problems](#)

 Do not plug a phone cable into your port replicator's network jack.

Getting help

This section describes how to get help and support from Sony, as well as troubleshooting tips for your computer.

Sony support options

Sony provides several support options for your computer.


Printed documentation supplied with your notebook

- ❑ A **Getting Started** brochure, where you find a brief description of the items in your box, some specifications of your notebook, and how to setup your notebook;
- ❑ A **Customer Guide**, where you find all the basic information you need to start using your notebook, as well as troubleshooting and VAIO-Link information;
- ❑ Your **Sony Guarantee conditions**;
- ❑ A **Safety Regulations** flyer;
- ❑ A **Modem Regulations** flyer.

Online user guides on your computer's hard drive

- ❑ The **Sony notebook user guide (hardware guide)** explains how to use your computer, connect peripheral devices. It contains a list of specifications of your computer and accessories.
- ❑ The **About the software on your Sony notebook guide (software guide)** lists the pre-installed software titles and explains how to use the utility programs and perform basic computer tasks. Go to <http://www.club-vaio.sony-europe.com> to find online tutorials about your favorite VAIO software.
- ❑ The **Customer Service Guide** gives you complete information on the VAIO-Link Services.

Other sources of information

- ❑ The **online help files** that accompany your pre-installed software contain instructions on using the software.
 - ❑ **VAIO-Link Web site:** if you have any problem with your computer, you can access the VAIO-Link Web site. Go to:
<http://www.vaio-link.com>
 - ❑ **VAIO-Link Response Centre:** Before contacting VAIO-Link Response Centre, try to solve the problem by reading the User Guides and help files for the peripherals or software.
-  You need to plug in the phone line and configure your modem for use before using the communication features described in this manual.

Troubleshooting

This section describes how to solve common problems you might encounter when using your notebook. Many problems have simple solutions. Please, try these suggestions before contacting VAIO-Link.

About the computer and software

My computer does not start

- ❑ Check that the computer is plugged into a power source and that it is turned on.
- ❑ Check that the power indicator on the front panel of the computer indicates that the power is on.
- ❑ Check that the battery packs are inserted properly and that they are charged.
- ❑ Make sure there is no diskette in the floppy disk drive.
- ❑ Confirm that the power cord and all cables are connected firmly.
- ❑ If you have plugged the computer into a UPS, make sure the UPS is turned on and works.

- ❑ If you are using an external display, check that it is plugged into a power source and turned on. Check that you have switched to the external display and that the brightness and contrast controls are adjusted correctly.
- ❑ Moisture condensation may have occurred. Do not use the computer for at least one hour and then turn it on.
- ❑ When the internal backup battery is low on power, it may not be able to start your system properly. If this is the case, keep your VAIO connected to the mains for several hours.

The message Press <F1> to resume, <F2> to setup appears at startup

If the floppy disk drive is empty, proceed as follows to initialize the BIOS:

- 1 Turn off the computer.
- 2 Remove any peripheral devices connected to the computer.
- 3 Turn on the computer and press **<F2>** when the Sony logo appears.
The BIOS setup menu screen appears.
- 4 Press the arrow keys to select the **Exit** menu.
- 5 Press the arrow keys to select **Get Default Values** and then press **<Enter>**. The **Load default configuration now?** message appears.
- 6 Make sure that **[Yes]** is selected and then press **<Enter>**.
- 7 Press the arrow keys to select **Save Changes** and then press **<Enter>**. The **Save configuration changes now?** message appears.
- 8 Make sure that **[Yes]** is selected and then press **<Enter>**.
- 9 Press the arrow keys to select **Shutdown** and then press **<Enter>**.
Your computer turns itself off.
- 10 Wait for 2-3 minutes and restart the computer.

My computer does not shut down

It is recommended that you shut down your computer using the **Turn Off Computer** command on the Windows® **Start** menu. Using other methods, including those listed here, may result in loss of unsaved data.

If the Turn Off command does not work properly, proceed as follows:

- ❑ Restart the computer by pressing **<Ctrl> + <Alt> + <Delete>**. The **Windows Task Manager** dialog box appears.
- ❑ Click **Shut Down** and then **Turn Off**.
- ❑ If this does not work, press the power switch and hold it for at least four seconds, this turns off the power.
- ❑ Unplug the computer from the AC adapter and remove the battery pack from your computer.

My computer locks up

- ❑ If you suspect one application is locking your system, you can try to stop it. To do this, press **<Ctrl>+<Alt>+<Delete>** simultaneously. If you have not changed the default settings, you will enter the **Task Manager**. Select the application or process that is locking your system, and then click **End Task**.
- ❑ If the above method does not work, or you do not know which application is locking your system, restart the computer. On the Windows® taskbar, click the **Start** button, click **Turn Off Computer**, and then select **Turn Off**.
- ❑ If the above method does not work, press the power switch and hold it for at least four seconds. This turns off the power.
- ❑ If your computer locks up while playing a CD-ROM, stop the CD-ROM, and shut down the computer by pressing **<Ctrl>+<Alt>+<Delete>**, and then click **Turn Off** from the **Shut Down** menu.

My software program locks up or crashes

Contact the software publisher or designated provider for technical support.

The pointer in the display moves on its own

A « drift » has occurred. This is not a malfunction. The pointer will stabilize if you do not touch the stick for a few seconds.

My mouse does not work

- ❑ Check that the mouse is plugged into the USB connector.
- ❑ If you are using an optional Sony USB mouse, check that the appropriate driver and mouseware are properly installed.

The key top comes off

- ❑ Put it back where it was and press it until it clicks.
- ❑ If you take off the key top intentionally or press it excessively when you replace it, it may cause a malfunction. Handle it with care.

About the Bluetooth™ technology

I cannot use the Bluetooth™ function

- ❑ If the Bluetooth™ LED is off, turn on the Bluetooth™ switch located on the front of your notebook (just above the <F6> key).
- ❑ You cannot use the Bluetooth™ function when the computer is in a power saving mode. Return to normal mode, then turn on the Bluetooth™ switch located on the front of your notebook (just above the <F6> key).
- ❑ You may not be able to use the Bluetooth™ function if you choose the **minimum CPU performance feature in PowerPanel**. Select another mode. See the **PowerPanel** online help for more details.
- ❑ You may not be able to use the Bluetooth™ function if you choose **Ultimate Battery Life in PowerPanel**. Select another mode. See the **PowerPanel** online help for more details.

No Bluetooth™ communication is available

When the connection to other devices is established, you have to check if your device role is **Master**. If the role is **Slave**, it will not be possible to communicate with other devices.

To check if your device role is **Master**, proceed as follows:

- 1 In the **BlueSpace** window, click the **Setup** button displayed above your unit.
The **Bluetooth Setup** window appears.
- 2 In the **Properties** tab, check that the role is **Master**.
- 3 If the role is **Slave**, you will have to disconnect and restart the connection.

The connected device does not appear in the Remote Bluetooth Device Panel

If the connected device is also connected to other devices, it may not appear in your **Remote Bluetooth Device Panel** or you may not be able to communicate with the device.

If your notebook is already connected to other devices, you have to check if your device role is **Master**.

To check if your device role is **Master**, proceed as follows:

- 1 In the **BlueSpace** window, click the **Setup** button displayed above your unit.
The **Bluetooth Setup** window appears.
- 2 In the **Properties** tab, check that the role is **Master**.
- 3 If the role is **Slave**, you will have to disconnect and restart the connection or it will not be possible to communicate with other devices.

The Bluetooth™ device with which I want to communicate cannot be found

- ❑ Check that the Bluetooth™ function of the device with which you want to communicate is on. See the other device's manual for more details.

- ❑ If the device with which you want to communicate is already communicating with another Bluetooth™ device, it may not be found or it may not be able to communicate with your notebook.
- ❑ Check that the Bluetooth™ function of the device with which you want to communicate is on. See the other device's manual for more details.
- ❑ If the device with which you want to communicate is already communicating with another Bluetooth™ device, it may not be found or it may not be able to communicate with your notebook.

The data transfer rate is slow

The data transfer speed depends on the obstacles and/or the distance between the two devices, but also on the radio wave quality, the operating system or the software used. Try to move your notebook or try to place the two devices closer.

I cannot communicate with the other device although the distance between both devices is within 100 metres

- ❑ The data transfer distance can be shorter than 100 metres depending on existing obstacles between the two devices, on radio wave quality, on the operating system or the software used. Try to move your notebook or to place both devices closer.
- ❑ If the device with which you want to communicate is already communicating with another Bluetooth™ device, it may not be found or it may not be able to communicate with your notebook.
- ❑ Check that the Bluetooth™ function of the device with which you want to communicate is on. See the other device's manual for more details.

I cannot stop the Bluetooth™ function

- ❑ Turn on the **Bluetooth™** switch located on the front of your notebook (just above the <F6> key).
- ❑ If the above method does not work, press the power button and hold it for at least four seconds. This turns off the power.

I cannot connect to another Bluetooth™ device using services provided by another Bluetooth device

You can connect to another Bluetooth™ device only by using the services provided by your notebook. See the **BlueSpace** help and the other Bluetooth™ device's manual for details.

About the display

My LCD does not display anything

- ❑ Check that the computer is plugged into a power source and that it is turned on.
- ❑ Check that the power indicator on the front panel of the computer is on.
- ❑ Check that the battery packs are inserted properly and that they are charged.
- ❑ Adjust the brightness of the LCD.
- ❑ The computer may be in LCD (video) standby mode. Press any key to activate the display.
- ❑ The display mode may be set to external display mode. Press and hold the **<Fn>** key while pressing **<F7>** several times.

The screen image on my external display is not centered or sized properly

Use the controls on your external display to adjust the image.

The window I have just closed continues to appear on my LCD

Press the Windows® key and **<D>** key twice to refresh the screen.

The video image on my screen is too dark

If an external display is connected to the monitor connector, disconnect the display.

I cannot display MOTION EYE movies, DVD videos or finder images simultaneously on my notebook LCD display and on an external display

You cannot display those images on both displays. Please select just one display.

About CD-ROMs and diskettes

My CD-ROM drive tray does not open

- Make sure the computer is turned on.
- Press the **eject** button on the optical device drive.
- If the **eject** button does not work, you can open the tray by inserting a sharp, pointed object into the hole to the right of the **eject** button.

I cannot play a CD-ROM disc

- Make sure the label of the CD is facing up.
- If the CD requires software, make sure the software is installed according to the instructions of the program.
- Check the volume of your speakers.
- Clean the CD.
- Moisture condensation may have occurred. Leave the computer for at least one hour while it is turned on.

My floppy disk drive cannot write to a diskette

- The diskette is write-protected. Disable the write-protect feature or use a diskette that is not write-protected.
- Check that the diskette is properly inserted into the floppy disk drive.

When I double-click an application icon, a message such as 'You must insert the application CD into your CD-ROM drive' appears and the software does not start.

- ❑ Some titles require specific files that are located on the application CD-ROM. Insert the CD and try starting the program again.
- ❑ Make sure you place the disc in the tray with the label side facing up.

When I remove the Memory Stick™, an error message appears

Insert the Memory Stick™ in the slot again and press **<Enter>**. Wait until the active application finishes, then remove the Memory Stick™. If the message confirms eject of the Memory Stick™, click **OK**.

About the MOTION EYE camera

There is a vertical line when shooting a bright subject with a dark background using MOTION EYE

This is a phenomenon called "smear". It is not a malfunction.

The image in the view finder of Smart Capture is rough

If you are shooting a subject in rapid movement, there may be a gap. This is not a malfunction.

The images captured with MOTION EYE are not clear

- ❑ Shooting under fluorescent light may result in reflections.
- ❑ Red or green noises may occur if the captured images include dark parts.
- ❑ Check that the lens of the MOTION EYE is clean.
- ❑ Use the focus ring to adjust.

There are picture gaps and sound gaps when importing video images

Gaps may occur based on the effect settings in **Smart Capture Premium**.

The MOTION EYE does not show any images

- ❑ Check that other software such as **Smart Capture Premium** does not use the MOTION EYE.
- ❑ Depending on monitor mode, color palette and other causes, the video memory is running out and the camera image is not displayed. Reduce the color palette or monitor resolution.
- ❑ Start the camera setting utility and select **Default**.
- ❑ If the above countermeasures do not work, restart the computer.

About sound

My speakers are not producing sound

- ❑ The built-in speakers may be turned off. Press **<Fn>+<F3>** to turn on the speakers.
- ❑ The speaker volume may be turned to the minimum. Press **<Fn>+<F4>**, and then press **▶** or **↑** to increase the volume.
- ❑ If your computer is powered by battery, check that the battery is inserted properly and that it is charged.
- ❑ If you are using an application that has its own volume control, check that the volume is turned up.
- ❑ Check the volume controls in Windows®.
- ❑ If you use external speakers, check that the speakers are properly connected and the volume is turned up. If the speakers have a mute button, make sure it is off. If batteries power the speakers, check that the batteries are inserted properly and that they are charged.
- ❑ If you have connected an audio cable to the headphone connector, disconnect the cable.

My microphone does not work

If you are using an external microphone, check that the microphone is plugged into the microphone connector.

An error message appears when using voice-related software programs

- ❑ Double-click **Yamaha AC-XG** in **Control Panel**. Open the **Echo** tab and deselect the **Enable** check box. Click **Apply** and then **OK**.
- ❑ If you are using several voice-related software programs at the same time, close them.

I hear noise when I am listening to music through USB speakers/headphones

You have to set the CPU monitoring tool to **Performance** by using the **PowerPanel** software available on your notebook.

To set the CPU Control to Performance, proceed as follows:

- 1 Right-click the CPU icon in the task tray and click **Edit/Create Profiles...** from the menu. The **Profile Editor** window appears.
- 2 Click the profile you want to select on the left of the screen. **Maximum Battery Life** is automatically selected when your computer uses the battery.
- 3 Double-click **CPU Control - Performance** on the right of the screen. The **CPU Control** list appears with a check mark on the current setting.
- 4 Click **Performance**.
- 5 Click the **File** menu and then **Save**.
- 6 Click the **File** menu and then click **Exit**.

About peripherals

I cannot use DV devices. The message DV equipment seems to be disconnected or turned off appears

- ❑ Check that the DV device is turned on and that the cables are properly connected.
- ❑ If you are using multiple i.LINK™ devices, the combination of the connected devices may cause unstable operation. In this case, turn off the power of all connected devices and disconnect unused devices. Check the connection and then turn on the power again.

My PC Card is not working

- ❑ Make sure the PC card is compatible with your version of Windows®.
- ❑ Use the **Sony Notebook Setup** utility to disable devices you are not currently using.
- ❑ If you are using two PC cards, use the **Sony Notebook Setup** utility to disable the devices you are not currently using.
- ❑ Make sure that the PC card is properly inserted.

I cannot print

- ❑ Check that all the cables of the printer are correctly connected.
- ❑ Check that your printer is correctly configured and that you have up-to-date drivers. If needed, contact your dealer.
- ❑ Try a printer self test to check if the printer is still working.

About USB devices

There is noise when I am listening to music through USB speakers/headphones

To stop the noise, proceed as follows:

- 1 Right-click the CPU icon in the task tray and click **Edit/Create Profiles...** from the menu. The **Profile Editor** window appears.
- 2 Double-click **CPU Control – Performance** (or **Adaptive** or **Battery Life**) on the right of the screen. The **CPU Control** list appears. The current setting is selected (check mark).
- 3 Click **Performance**.
- 4 From the **File** menu, click **Save**.
- 5 From the **File** menu, click **Exit**.

About digital video captures and DVgate

While I am recording images to a digital video device using DVgate, my system displays the message Recording to DV device failed. Check the power and cable connections to the DV device and try the operation again...

Close all open applications and restart your computer. Frequent recording of images to a digital video device while using DVgate sometimes causes this error.

About i.LINK™ devices

I cannot establish an i.LINK™ connection between two VAIO computers

- Disconnect and reconnect the i.LINK™ cable.
- If you still have no connection after waiting for a while, restart both computers.
- If either computer has just returned from a power saving mode, the connection may be affected. In this case, make sure you perform a full restart before connecting them.

Precautions

This section describes safety guidelines and precautions to help you protect your computer from potential damage.

Your notebook and memory modules use high precision components and electronic connectors technology. To avoid the invalidation of your guarantee by mishandling, it is recommended that:

- You contact your dealer to install a new memory module.
- You do not install it yourself, if you are not familiar with upgrading memory on a notebook.
- You do not touch the connectors or open the memory panel.

Please contact VAIO-Link if you need assistance.

Adding and removing memory

In the future you may want to install memory modules to expand the functionality of your computer. You can increase the memory by installing optional memory modules.

Be careful when adding memory. Mistakes on installation or removal of the memory module may cause a malfunction.

For memory upgrades, use only PC100 (CL2) SDRAM SO-DIMM (gold leaf contacts).

Electrostatic discharge can damage electronic components. Before touching a memory expansion board, ensure the following:

- Handle the memory module gently.
- The procedures described in this document assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment.

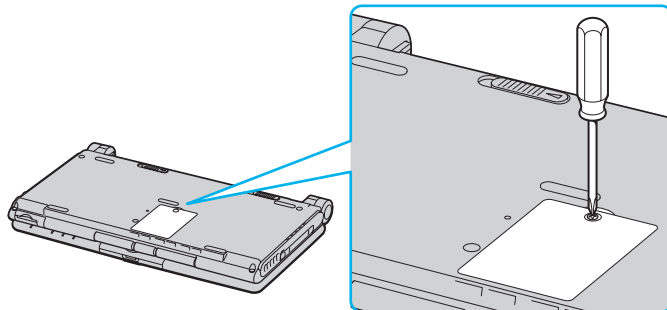
- ❑ Disconnect the system from its power source and from any telecommunication links, networks, or modems before you open the system. Failure to do so may result in personal injury or equipment damage.
- ❑ Electrostatic Discharge (ESD) can damage memory modules and other components. Install the memory module only at an ESD workstation. If such a station is not available, do not work in a carpeted area, and do not handle materials that produce or hold static electricity (cellophane wrappers, for example). Ground yourself by maintaining contact with an unpainted metal portion of the chassis while performing the procedure.
- ❑ Do not open the memory module package until you are ready to install the module. The package protects the module from ESD.
 - ! Use the special bag delivered with the memory module or wrap the module in aluminium foil to protect it from electrostatic discharge.
 - ! Do not place the memory module in places subject to:
 - Heat sources such as radiators or air ducts,
 - Direct sunlight,
 - Excessive dust,
 - Mechanical vibration or shock,
 - Strong magnets or speakers that are not magnetically shielded,
 - Ambient temperature of more than +35°C or less than +5°C,
 - High humidity.

Removing a memory module

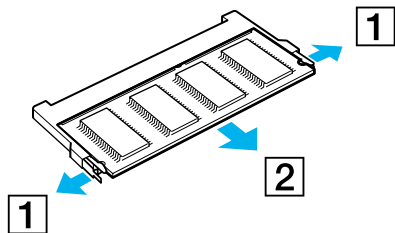
To remove a memory module, proceed as follows:

- 1 Shut down your computer and disconnect all peripheral devices.
- 2 Unplug the computer and remove the battery pack.
- 3 Wait until the computer cools down.
The inside of a notebook becomes extremely hot during operation. Wait for about one hour for the computer to cool down before you remove the screws.

- 4 Unscrew the screw at the bottom of your computer, as shown. Use a precision Phillips screwdriver that matches the size of the screw heads.



- 5 Before you remove the memory module, touch a metal part of the computer to discharge any static electricity accumulated on your body.
- 6 Remove the memory module:
 - ❑ Carefully push the release tabs on either end of the memory module at the same time (1).
 - ❑ Pull out the memory module in the direction of the arrow (2).

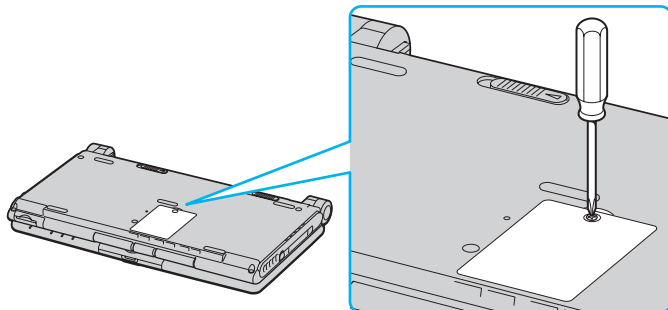


- 7 Put the memory cover back on securely and replace the screw. Use a Phillips (+) screwdriver to tighten the screw.

Adding a memory module

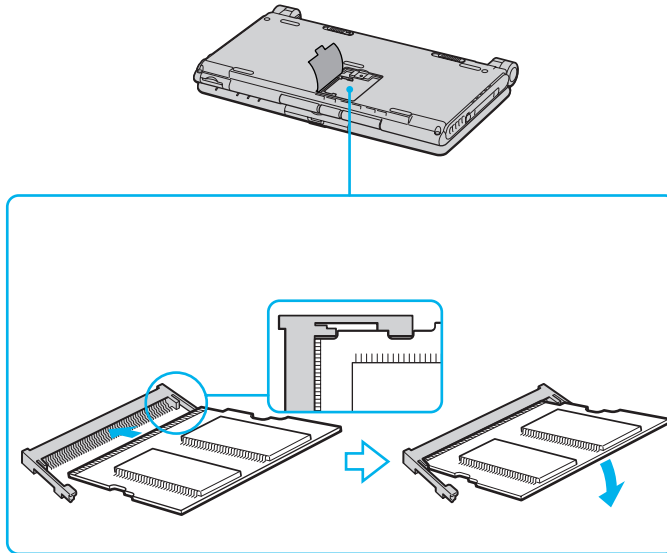
To add a memory module, proceed as follows:

- 1 Shut down your computer and disconnect all peripheral devices.
- 2 Unplug the computer and remove the battery packs.
- 3 Wait until the computer cools down.
The inside of a notebook becomes extremely hot during operation. Wait at least one hour for the computer to cool down before you remove the screws.
- 4 Unscrew the screw at the bottom of your computer.
Use a precision Phillips screwdriver that matches the size of the screw head.



- 5 Before you remove the module from its package, touch a metal part of the computer to discharge any static electricity accumulated on your body.
- 6 Remove the module from its protective package.
- 7 Install the memory module by holding the module edge connector pointing down and the notch on the right, and then insert it diagonally into an empty slot.
- 8 Lower the memory module until it clicks into place on both ends:

- ❑ Slide the memory module into the slot.
- ❑ Snap the connector into place when the board is correctly seated.



- 9 Close the cover securely and replace the screw.
Use a Phillips (+) screwdriver to tighten the screw.

Viewing the amount of memory

To view the amount of memory, proceed as follows:

- 1 Turn on the computer.
- 2 Go to **Sony Notebook Setup** via the **Start** menu.
The **Sony Notebook Setup** dialog box appears.
- 3 In the **About this Computer** tab you can view the amount of system memory. If the additional memory does not appear, repeat the whole procedure and restart the notebook.

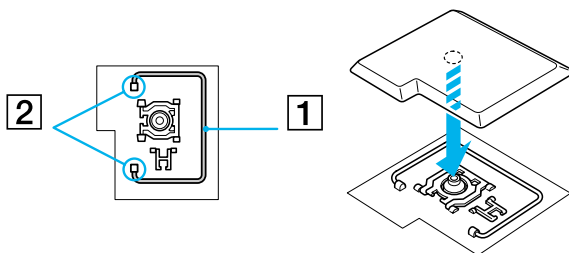
Placing a key top

If the enter or the space key comes off, replace the key top as shown below. If another key top comes off, put it where it was and push until it clicks into place.

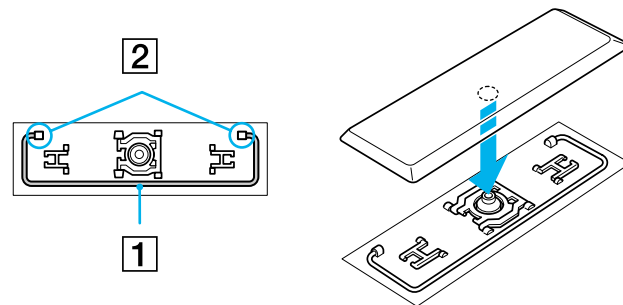
To replace a key top, proceed as follows:

- 1 Remove the wire (1) under the key top if necessary.
- 2 Insert each side of the wire into one hook (2).
- 3 Make sure the center of the key top is aligned with the center underneath and press the key top until it fits.

Enter key:



Space key:



Do not take off the key top intentionally. It may cause malfunction.

Handle the key top with care; your computer may be damaged if you press it to excess.

Other precautions

On handling the LCD screen

- ❑ Do not leave the LCD facing the sun as it can damage the LCD. Be careful when using the computer near a window.
- ❑ Do not scratch the LCD or exert pressure on it. This could cause malfunction.
- ❑ Using the computer in low temperature conditions may produce a residual image on the screen. This is not a malfunction. When the computer returns to normal temperature, the screen returns to normal.
- ❑ A residual image may appear on the screen if the same image is displayed for a lengthy period of time. The residual image disappears in a while. You can use a screensaver to prevent residual images.
- ❑ The screen becomes warm during operation. This is normal and does not indicate a malfunction.
- ❑ The LCD is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD. This is a normal result of the manufacturing process and does not indicate a malfunction.
- ❑ Avoid rubbing the LCD screen, as this can damage the screen. Use a soft, dry cloth to wipe the LCD screen.

On using power source

- ❑ Your computer operates on 100V-240V AC 50/60 Hz.
- ❑ Do not share the AC outlet with other power-consuming equipment, such as a photocopier or shredder.
- ❑ You can purchase a power strip with a surge protector. This device prevents damage to your computer caused by sudden power surges such as those that may occur during an electrical storm.
- ❑ Do not place heavy objects on the power cord.
- ❑ To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- ❑ Unplug your computer from the wall outlet, if you will not be using the computer for a long time.
- ❑ When the AC adapter is not used, unplug it from the AC outlet.
- ❑ Use only the supplied AC adapter. Do not use any other AC adapter.

On handling your notebook

- ❑ Clean the cabinet with a soft, dry cloth or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzine, as these may damage the finish of your computer.
- ❑ Should any solid object or liquid fall into the computer, shut down your computer and then unplug it. You may want to have the computer checked by qualified personnel before operating it any further.
- ❑ Do not drop the computer or place heavy objects on top of the computer.
- ❑ Do not place your computer in a location subject to:
 - ❑ Heat sources, such as radiators or air ducts,
 - ❑ Direct sunlight,
 - ❑ Excessive dust,
 - ❑ Moisture or rain,
 - ❑ Mechanical vibration or shock,
 - ❑ Strong magnets or speakers that are not magnetically shielded,
 - ❑ Ambient temperature of more than 35°C or less than 10°C,
 - ❑ High humidity.
- ❑ Do not place electronic equipment near your computer. The electromagnetic field of your computer may cause a malfunction.
- ❑ Provide adequate air circulation to prevent that internal heat builds up. Do not place your computer on porous surfaces such as rugs or blankets, or near material such as curtains or draperies that may block its ventilation slots.
- ❑ The computer uses high-frequency radio signals and may cause interference to radio or TV reception. Should this occur, relocate the computer a suitable distance away from the set.
- ❑ Use only specified peripheral equipment and interface cables; otherwise, problems may result.

- ❑ Do not use cut or damaged connection cables.
- ❑ Your computer cannot be connected to a coin-operated telephone, and may not work with a private branch exchange (PBX).
- ❑ If the computer is brought directly from a cold location to a warm one, moisture may condense inside your computer. In this case, allow at least one hour before turning on your computer. If any problem occurs, unplug your computer and contact VAIO-Link.
- ❑ Make sure to disconnect the power cord before cleaning the computer.

On handling diskettes

- ❑ Do not open the shutter manually and touch the surface of the diskette.
- ❑ Keep diskettes away from magnets.
- ❑ Keep diskettes away from direct sunlight and other heat sources.

On handling CD-ROM discs

- ❑ Do not touch the surface of the disc.
- ❑ Do not drop or bend the disc.
- ❑ Fingerprints and dust on the surface of a disc may cause read errors. Proper care of the disc is essential to maintain its reliability. Do not use solvents such as benzene, thinner, commercially available cleaners or anti-static spray, as they may cause damage to the disc.
- ❑ For normal cleaning, hold the disc by its edge and use a soft cloth to wipe the surface from the center out.
- ❑ If the disc is badly soiled, moisten a soft cloth with water, wring it out well, and use it to wipe the surface of the disc from the center out. Wipe off any remaining moisture with a dry soft cloth.

On using the battery pack

- ❑ Never leave the battery pack in temperatures above 60°C, such as in a car parked in the sun or under direct sunlight.
- ❑ Battery life is shorter in a cold environment. This is due to decreased battery efficiency at low temperatures.
- ❑ Charge the batteries at temperatures between 10°C to 30°C. Lower temperatures require a longer charging time.
- ❑ While the battery is in use or being discharged, the battery pack heats up. This is normal and is not cause for concern.
- ❑ Keep the battery pack away from all sources of heat.
- ❑ Keep the battery pack dry.
- ❑ Do not open or try to disassemble the battery pack.
- ❑ Do not expose the battery pack to any mechanical shock.
- ❑ If you are not using the computer for an extended period of time, remove the battery pack from the computer to prevent damage to the battery.
- ❑ If, after fully charging the battery pack, the battery power is still low, the battery pack may be reaching the end of its life and should be replaced.
- ❑ You do not need to discharge the battery before recharging.
- ❑ If you have not used the battery pack for a considerable amount of time, recharge the battery.

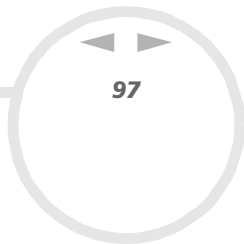
On using earphones

- ❑ **Road safety** – Do not use earphones while driving, cycling, or operating any motorized vehicle. It may create a traffic hazard and is illegal in some areas. It can also be potentially dangerous to play loud music while walking, especially at pedestrian crossings.

- ❑ **Preventing hearing damage** – Avoid using earphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce the volume or discontinue use.

On handling Memory Stick™

- ❑ Do not touch the connector with your finger or metallic objects.
- ❑ Use only the label supplied with the Memory Stick™ as a label.
- ❑ Do not bend, drop, or apply strong shock to the Memory Stick™.
- ❑ Do not disassemble or modify Memory Sticks™.
- ❑ Do not let cards get wet.
- ❑ Do not use or store Memory Sticks™ in a location subject to:
 - ❑ Extremely high temperatures, such as in a car parked in the sun,
 - ❑ Direct sunlight,
 - ❑ High humidity or near corrosive substances.
- ❑ Use the storage case supplied with the Memory Stick™.



PCG-C1MGP specifications

Product name:

PCG-C1MGP

<i>Model number</i>	PCG-181M
<i>Operating system</i>	Microsoft® Windows® XP Professional
<i>Processor</i>	Crusoe™ Processor TM5800 733 MHz*
<i>Hard disk drive</i>	20 GB
<i>Standard RAM</i>	128 MB DDR-SDRAM**
<i>Maximum RAM</i>	256 MB with μDIMM
<i>LCD screen</i>	8.9" TFT display Ultra Wide SXGA
<i>L2 cache memory</i>	512 KB (CPU integration)
<i>MPEG</i>	MPEG2 Digital Video playback MPEG2 Hardware Encoder
<i>Graphics</i>	ATI MOBILITY™ RADEON™-M with 8 MB*** Video RAM and 3D accelerator
<i>Sound capabilities</i>	16-bit CD-quality stereo sound
<i>Internal modem</i>	Built-in modem V.90 data/fax modem
<i>Expansion capabilities</i>	One PCMCIA type II Card and Cardbus support

Product name:**PCG-C1MGP**

<i>Built-in capabilities</i>	Microphone, stereo speakers, MOTION EYE camera, pointing device, Jog Dial™, MagicGate Memory Stick™
<i>Special buttons</i>	Jog Dial™, Capture, Bluetooth™
<i>Connection capabilities on notebook</i>	MagicGate Memory Stick™ or Memory Stick™, external speakers, microphone, USB, Type II PC Cards, i.LINK™ (IEEE1394) S400, VAIO notebook peripheral device DC out connector
<i>Connection capabilities on port replicator</i>	VGA monitor, Ethernet, USB, A/V OUT, A/V IN
<i>Supplied accessories</i>	Rechargeable battery, AC adapter, power cord, spare stick covers, AV cable, port replicator, phone cable, phone plug
<i>Service</i>	± 1 year free VAIO-Link Service
<i>Power source</i>	16 V DC/AC 100-240V
<i>Power management</i>	ENERGY STAR® compliant ACPI (Advanced Configuration & Power Interface)
<i>Battery</i>	Lithium ion
<i>Dimensions</i>	
<i>Width</i>	249.4 mm
<i>Height</i>	28.5 mm
<i>Depth</i>	152.5 mm

Product name:**PCG-C1MGP**

<i>Weight With battery</i>	998 g
<i>Operating temperature</i>	+5°C to +35°C (temperature gradient less than 10°C/hour)
<i>Storage temperature</i>	-20°C to +60°C (temperature gradient less than 10°C/hour)
<i>Operating humidity</i>	20% to 80% (not condensed), provided that humidity is less than 65% at +35°C (hygrometer reading of less than 29°C)
<i>Storage humidity</i>	10% to 90% (not condensed), provided that humidity is less than 20% at +60°C (hygrometer reading of less than 35°C)
<i>Wireless communication: Method of communication</i>	Bluetooth™ standard Ver. 1.1
<i>Maximum communication speed</i>	Approx. 723 kbps
<i>Output</i>	Bluetooth™ standard Power Class1
<i>Communication distance</i>	Approx. 100 – 10 m (open space)
<i>Compatible Bluetooth™ profile</i>	Generic Access Profile Service Discovery Application Profile Serial Port Profile Dial-up Networking Profile Fax Profile LAN Access Profile Generic Object Exchange Profile Object Push Profile

Product name:**PCG-C1MGP**

<i>Usable frequency band</i>	2.4 GHz band (2.400 GHz – 2.4835 GHz)
<i>Bundled software</i>	BlueSpace, VisualShare
<i>MOTION EYE camera</i>	350,000 pixels (square pixels)
<i>Image device</i>	1/6 inch, progressive scan 350,000 pixels CCD
<i>Lens</i>	Focus distance: f = 2.8 mm, F = 3.4 mm
<i>White balance</i>	Automatic/Indoor/Outdoor/Hold
<i>Shutter speed</i>	Auto/1/50/Hold
<i>Video capture format size</i>	YUY2/24 bit RGB MPEG2/MPEG1: size: VGA, hVGA
<i>Displayed frames</i>	30 frames/s. max (overlay)
<i>Captured frames</i>	30 frames/s. max. (640 x 480 MPEG2)

* Depending on a series of conditions, the CPU clock speed may vary between 333 and 733 MHz.

** Out of the 128 MB DDR-SDRAM, 16 MB are used by the emulator software used for the Transmeta CPU. So only 112 MB are available for your system after booting.

*** The 8 MB memory is used to display the screen and to store the textures for 3D applications.

‡ See our special Guarantee extension conditions.

Specifications are subject to change without notice.

Glossary

This section refers to terms used in this manual. These terms and definitions have been compiled to provide you with a better understanding of your VAIO computer.

Term	Definition
<i><F1> key</i>	The <F1> key gives you access to the online help of most software.
<i>10BASE-T/100BASE-TX</i>	Ethernet system providing data transfer rates of 10 Mbps (megabits per second) and 100 Mbps. The 100BASE-TX is a very direct derivative of 10BASE-T. Its 100 Mbps speed is achieved by simply sending the signal 10 times faster.
<i>ACPI</i>	Short for Advanced Configuration and Power Interface, a power management specification. ACPI enables the operating system to turn peripherals on and off and to control the amount of power given to each device attached to the computer. With ACPI, a CD-ROM player can be turned off by the operating system if it is not in use.
<i>Application recovery</i>	A recovery process that enables you to recover any of the applications initially available on the computer. Performing an application recovery is useful when an individual application does not run properly or to reinstall a driver when a device does not work properly.
<i>Application recovery CD-ROM</i>	CD-ROM that enables a VAIO computer user to recover all the applications that were available when the computer was purchased. The CD-ROM is supplied with the computer.
<i>BIOS</i>	An acronym for Basic Input/Output System. The BIOS is a program that enables the computer to start when you turn it on. It monitors the data stream between the operating system and the computer's hardware devices.
<i>CardBus</i>	CardBus is the commercial name for an advanced PC Card. The CardBus technology allows computer users to enjoy higher performances as far as data transfer and operating speed are concerned. See PCMCIA.

Term	Definition
<i>CD-ROM</i>	Abbreviation for Compact Disc Read-Only Memory. A high-capacity optical disc, usually 650 MB in size, capable of being read from but not written to.
<i>CD-RW</i>	Short for Compact Disc-ReWriteable. Compact Disc that can be used to write or rewrite data to it. A CD-RW can be written to several times, a CD-R can only be written to once.
<i>CPU</i>	The CPU (Central Processing Unit) is the brains of the computer; it processes the instructions of your system's programs. The CPU is also known as the processor or microprocessor and can be found on the motherboard of your computer.
<i>DC In</i>	The Direct Current interface to which you connect your computer's AC adapter.
<i>Docking station</i>	An additional device that you can connect to your notebook. The docking station contains slots for expansion boards, bays for storage devices and ports for additional peripherals (such as printers or monitors).
<i>Driver</i>	A driver is software enabling you to use hardware devices. For example, in order for you to be able to use a printer, you must first install its driver. Many drivers, such as the mouse driver, come with the operating system.
<i>DVD-ROM</i>	Short for Digital Video Disc. A type of read-only CD with a minimum capacity of 4.7 GB (maximum capacity can reach 17 GB). This high storage power makes it the ideal medium for storing films.
<i>Ethernet</i>	Ethernet is the most widely implemented local area network (LAN) technology. The Ethernet system called 10BASE-T provides data transfer rates of 10 Mbps (megabits per second). A more recent version of Ethernet, called 100BASE-T, provides data transfer rates of 100 Mbps. Gigabit Ethernet supports data rates of 1 gigabit (1,000 megabits) per second.

<i>Term</i>	<i>Definition</i>
<i>EULA</i>	EULA (End-User License Agreement) is the name given to a license governing the software on your computer. The EULA can be found in the Read this first section at the beginning of the software guide or directly on the VAIO desktop.
<i>i.LINK™</i>	i.LINK™ is Sony's version of the IEEE 1394 standard for high-speed digital serial interface. The standard is regarded in the audio/video and IT industries as the most suitable interface for connecting computers and digital audio/video devices (such as digital cameras etc.).
<i>ISP</i>	An ISP (Internet Service Provider) is a company which provides you with a user name, password and telephone number in order to connect to the Internet.
<i>L2 cache memory</i>	Cache memory is RAM-like memory that enables quick access to data that has already been read by the computer. L1 and L2 are levels of cache memory in a computer.
<i>LAN</i>	A LAN (Local Area Network) is a group of computers connected together within a limited geographical area. It enables users to share devices (such as printers) and information using one processor or server.
<i>LCD</i>	Short for Liquid Crystal Display. Flat notebook display technology using liquid crystals (and light polarisation) to provide sharp, flicker-free images on a screen comprised of millions of tiny cells. Color can be produced by two basic techniques. Passive matrix is the less expensive of the two technologies. The active matrix technology (or TFT) produces better quality but is also more expensive.
<i>LED</i>	Short for Light-Emitting Diode. A semiconductor device that lights up when electricity passes through it.
<i>Lithium-ion battery</i>	A lithium-ion battery uses lithium cobalt oxide and carbon as electrodes and ions move from one electrode to the other during charge and discharge. Lithium-ion batteries are the first choice for notebooks because of their light weight, high energy density and because they have no memory effect. In addition they do not use heavy metals like lead, mercury or cadmium.

Term	Definition
<i>MAPI</i>	Short for Messaging Application Program Interface. A Microsoft Windows interface enabling you to send e-mail messages. It allows e-mail access and distribution among applications. MAPI-compatible applications include a Send Mail or Send in the File menu of the application.
<i>maximum RAM</i>	The maximum amount of RAM that your computer can contain. Once this amount is reached, you can no longer add additional RAM to your computer.
<i>Motherboard</i>	The motherboard is the main circuit board inside your computer. It holds the CPU, the BIOS, the memory and so on.
<i>MPEG</i>	MPEG or Moving Pictures Experts Group is a standard for audio-visual compression of video sequences. MPEG achieves high compression rates by storing only the changes from one frame to another. The decrease in data is generally imperceptible to the human eye. MPEG-1 was developed for digital storage of video and audio data on CD-ROM. MPEG-2 achieves better image and audio quality and is more targeted to TV broadcasting and DVD.
<i>Operating system</i>	The operating system is software that manages all the other programs in a computer. It defines how the computer reads and writes information to its disks (and other hardware). Windows 2000, Windows Millennium Edition, Windows XP Professional and Windows XP Home Edition are examples of operating systems found on VAIOs.
<i>Partition</i>	A partition is a logical division of a computer's hard disk. A two-partition hard drive would typically contain C: and D: drives. Partitioning is particularly useful if you run more than one operating system or to clearly separate your data files from your installed software.
<i>PBX</i>	A PBX (Private Branch Exchange) is a private telephone network within an enterprise. Under this system, the calls between the enterprise members are local and the phone numbers are made up of 3 or 4 digits. Companies generally choose this phone system for internal communication because it is less expensive than the regular network. The users can still share a number of outside lines for making calls external to the PBX.

Term	Definition
<i>PC Card</i>	A PCMCIA card. The term PC Card is more widely used than PCMCIA. See PCMCIA.
<i>PCMCIA</i>	PCMCIA (Personal Computer Memory Card International Association) is the name of the group that produced the specification for the credit card-sized plug-in boards for laptop computers. The cards used to be called PCMCIA cards, but as this was rather unpronounceable, these cards are now termed PC cards. An example of a PC card is a credit card-sized modem.
<i>Pixel</i>	A pixel (Picture Element) is a part of your screen. Your screen is made up of thousands of pixels, enabling you to see colours and pictures on it. The more pixels, the higher the resolution and the better the image quality.
<i>Port replicator</i>	An additional device that you can connect to your notebook. The port replicator contains ports that enable you to connect additional peripherals (such as a printer or a monitor) to your VAIO. A port replicator is similar to a docking station, but does not include additional slots for adding expansion boards or storage devices.
<i>Processor</i>	The processor is the brains of the computer; it processes the instructions of your system's programs. The processor is also known as the CPU or microprocessor and can be found on the motherboard (see this word) of your computer.
<i>Product recovery CD-ROM</i>	The product recovery CD-ROMs include the application recovery CD-ROM and the system recovery CD-ROM(s)
<i>PS/2</i>	A type of mouse or keyboard port.
<i>PSTN</i>	PSTN (Public Switched Telephone Network) refers to the plain old telephone service, the national telecommunication networks implementing voice transmission by using analog signals.

Term	Definition
<i>RAM</i>	Short for Random Access Memory, the memory used to run programs and store data in current use. RAM is the fastest kind of memory to read from and write to. Information stored in RAM is lost when you turn off the computer. The higher the RAM capacity, the faster your current data can be processed.
<i>Resolution</i>	The degree of sharpness and clarity of an image. Resolution is expressed in pixels. Frequent computer screen resolutions are 640 x 480 pixels (VGA resolution; appropriate for a 14-inch screen), 800 x 600 (appropriate for a 15-inch screen), 1,024 by 768 (appropriate for a 17-inch screen), and 1,280 by 1,024. LCD displays usually use a higher resolution than a CRT of the same size.
<i>RGB signal cable</i>	RGB stands for Red, Green, Blue. A cable that requires separate transmission types for the three colours on the display.
<i>SDRAM</i>	Synchronous DRAM is a kind of dynamic random access memory running at a much higher clock speed than regular memory.
<i>SELV</i>	Short for Safety Extra Low Voltage. A secondary circuit which is so designed and protected that its voltages do not exceed a safe value under normal operating conditions.
<i>Standard RAM</i>	The amount of RAM that is available on your computer when you purchase it.
<i>System recovery</i>	A recovery process that enables you to recover the hard disk image initially available on the computer. Performing a system recovery is useful in the event of a serious system crash or if you want to modify the size of your partitions.
<i>System recovery CD-ROM</i>	CD-ROM that is supplied with your computer and that enables a VAIO computer user to recover the hard disk image that was available when the computer was purchased.

<i>Term</i>	<i>Definition</i>
<i>TFT</i>	Short for Thin Film Transistor. Top-of-the-range notebook display for excellent picture quality. The TFT technology offers the sharpest resolution for flat displays; each pixel is supported by one to four transistors.
<i>TNV</i>	Short for Telecommunications Network Voltage. A secondary circuit that, under normal operating conditions, carries telecommunication signals. A typical TNV-circuit is a PSTN (Public Switched Telephone Network) modem.
<i>UPS</i>	A UPS (Uninterruptible Power Supply) is a device including a battery that protects your computer from data loss in the event of a power failure. The battery takes over as soon as a power interruption is detected. If you are using the computer when the power failure occurs, you have time to save all unsaved data and to shut down your computer.
<i>USB</i>	USB (Universal Serial Bus) is a hardware interface for attaching devices (such as a keyboard, mouse, joystick, scanner or printer). You can connect up to 127 devices to a USB port. The USB standard is Hot Plug and Play.
<i>VAIO</i>	Short for Video Audio Integrated Operation. Brand name covering Sony's PC products, peripherals, accessories and software. VAIO-branded items are all designed to make the best use of Sony's Audio-Video (AV) and Information Technology (IT) skills.
<i>WAN</i>	WAN (Wide Area Network) is a computer network connected together and covering a relatively large geographical area. This is in contrast to LAN, where the network is usually set up within one building or small geographical area. The largest existing WAN is the Internet.
<i>XGA</i>	Short for Extended Graphic Array, a graphics standard. An XGA board can provide up to 1,024 x 768 pixels and supports up to 65 thousand colours.